COMMONWEALTH MYCOLOGICAL INSTITUTE

REVIEW OF MEDICAL AND VETERINARY MYCOLOGY

VOL. II 1953 PART 2

162. WILSON (J. W.), LEVITT (H.), & PLUNKETT (O. A.). **Asterol dihydrochloride in the treatment of dermatophytosis caused by Trichophyton rubrum (purpureum).**—*J. invest. Derm.*, 19, 5, pp. 319–324, 5 graphs, 1952.

A report is presented on the treatment of 61 refractory cases of chronic trichophytosis due to *Trichophyton rubrum* in southern California with 5 per cent. asterol dihydrochloride [1, Nos. 2507, 2508] both in alcoholic solution and water-miscible ointment base. The fungicide was most effective in the cure or improvement of lesions on the glabrous skin, but those on the palms and soles also responded moderately well; nail involvement presented a more difficult problem.

163. STERNBERG (T.), TARBET (J. E.), NEWCOMER (V. D.), & WINER (L. H.). **Deep infection of Mice with Trichophyton rubrum (purpureum).**—*J. invest. Derm.*, 19, 5, pp. 373–384, 4 pl., 1952.

At the University of California Medical Center, Los Angeles, the inoculation of mice with *Trichophyton rubrum* resulted in a pathological process, culminating in chronic granulomatous lesions, simulating those of Hodgkin's disease, in the omentum, liver, spleen, and muscles. The Hotchkiss-McManus stain [1, No. 1824] revealed large numbers of fungal elements which were undetectable in sections of the lesions treated with haematoxylin and eosin. Adaptation of the fungus to the deep tissue environment (challenging its present classification as an obligatory superficial parasite) was indicated by the presence of branching mycelium and a few unicellular forms, and by the reisolation of the pathogen from mice up to 25 days after inoculation. Animal passage appeared to effect a cultural 'rejuvenation' of three attenuated strains of *T. rubrum*.

164. STÜHMER (H.). **Subunguale Epidermophytie, Trichophytie und Favus. Eine bisher nicht bekannte Form von Nagelmykosen.** [Subungual epidermophytosis, trichophytosis, and favus. A hitherto unknown form of onychomycosis.]—*Arch. Derm. Syph., Wien*, 193, 6, pp. 527–536, 8 figs. (3 col.), 1952.

Three cases of subungual onychomycosis, a hitherto unknown form of the complaint, are reported from Germany. One was demonstrated by cultural studies at the University Skin Clinic, Freiburg-im-Breisgau, to be caused by *Epidermophyton* [*Trichophyton*] *rubrum*, and the others were associated with favus and trichophytosis [of unspecified origin].

165. WEBER (W. E.) & ULRICH (J. A.). **Kerion caused by Trichophyton rubrum. Report of two cases.**—*Arch. Derm. Syph., Chicago*, 66, 5, pp. 624–626, 1 fig., 1952.

Two cases of inflammatory kerion due to *Trichophyton rubrum* are reported from the Mayo Clinic, Rochester, Minnesota, one involving the back of the neck in a five-year-old farm boy and the other the base of the third finger on the dorsum of the right hand in a 69-year-old farmer.

166. Tchobanian (H. K.). **Phenomena occurring on the face in cases of favus.**—*Brit. J. Derm.*, 64, 10, pp. 385–386, 2 figs., 1952.

Attention is drawn to a phenomenon observed by the author in 70 per cent. of the cases of long-standing favus (*Achorion* [*Trichophyton*] *schoenleini*), averaging 420 annually, examined between 1920 and 1951 at the Royal Teaching Hospital, Baghdad, Iraq. It is a remarkably penetrating look in the eyes, which are usually deeply set in their sockets under exceptionally long eyebrows and eyelashes. This manifestation of the complaint tends to develop four to six years after the onset of infection. Sometimes it is accompanied by the appearance of thick, long lanugo hairs on both sides of the forehead. Two cases, in 14- and 16-year-old males, are briefly described.

167. Fleger (J.). **Klinička ocjena retgenske epilacione metode s 3 polja i 3 bolesnika kod dečjih dermatofitskih oboljenja kose.** [Clinical estimation of the roentgen method of epilation with three fields tested on three patients with dermatophytic disease of the hair.]—*Med. Arh.*, *1951*, 5–6, pp. 43–51, 1951. [Abs. in *Excerpta med.*, *Amst.*, Sect. XIII, 6, 11, pp. 530–531, 1952.]

By a group method permitting the simultaneous exposure of three patients to X-rays in three fields, 222 cases of favus (*Achorion*) [*Trichophyton schoenleini*] and 149 of trichophytosis [*T.* spp.] were epilated at Sarajevo, Yugoslavia. The results were complete and uniform in 90 per cent. of the cases; the remainder required a further exposure. Epilation was followed by medical therapy. Relapses occurred in 4·3 per cent. of the patients (15 with favus and one with trichophytosis).

168. Reiss (F.) & Caroline (Leona). **The influence of ACTH and cortisone upon experimental Achorion quinckeanum infection and upon anaphylaxis in Guinea Pigs.**—*J. invest. Derm.*, 19, 5, pp. 365–371, 1952.

Of 12 guinea-pigs artificially infected by *Achorion* [*Trichophyton*] *quinckeanum* [see next entry], four were treated with adrenocorticotropic hormone and four with cortisone. No change in the course of the disease followed the administration of ACTH, but there was a significant prolongation of the first infection (not of reinfection) in the cortisone-treated animals. Neither medicament altered the trichophytin reaction.

169. Sonck (C. E.) & Miescher (G.). **Der Einfluss von Cortison auf die Meerschweinchentrichophytie.** [The influence of cortisone on Guinea-pig trichophytosis.]—*Bull. schweiz. Akad. med. Wiss.*, 8, 1–2, pp. 220–224, 1 graph, 1952. [English summary.]

At the Dermatological Clinic of the University of Zürich, the influence of cortisone (15 to 30 mg. per kg.) on the clinical picture and allergic reactions of guinea-pig trichophytosis was tested, using a highly pathogenic strain of *Achorion* [*Trichophyton*] *quinckeanum* [see preceding entry]. The symptoms were not appreciably modified and the course of the disease was only slightly retarded. There was a definite but not very pronounced weakening of the trichophytin reaction in the treated animals as compared with the controls.

170. Georg (Lucille K.). **Trichophyton tonsurans—a new public health problem.**—*Publ. Hlth Rep., Wash.*, 67, 1, pp. 53–56, 5 figs., 1952.

The clinical aspects, laboratory diagnosis, and epidemiology of the form of tinea capitis caused by *Trichophyton tonsurans* [1, No. 2502] are discussed in the light of 19 contributions to the relevant literature. The complaint is assuming progressively greater importance in certain sections of the United States, especially Texas and other parts of the south-west. The glabrous skin and nails may also be involved.

171. Georg (Lucille K.). **Cultural and nutritional studies of Trichophyton gallinae and Trichophyton megnini.**—*Mycologia*, 44, 4, pp. 470–492, 5 figs., 1952.

Nutritional and morphological studies of a series of strains of *Trichophyton megnini* [1, No. 2537] showed that all required the addition of l-histidine to grow on an ammonium nitrate-dextrose medium. In the presence of histidne the most stimulating amino acids were asparagine, glutamine, and arginine. All strains were inhibited to some extent by hydroxyproline. No stimulation of growth occurred when water-soluble vitamins were added to a histidine medium while vitamin K_3 exerted an inhibitory effect. Spore production in most strains was stimulated by growth on media rich in amino acids, though further addition of histidine to trypticase-dextrose agar did not increase growth or sporulation. The micro- and macroconidia of *T. megnini* are described.

Five strains showed morphological resemblance to *T. gallinae*. They grew well on inorganic nitrogen medium and did not respond to the addition of casein or amino acids. No stimulation of the *T. gallinae* strains was observed upon the addition of water- or fat-soluble vitamins. The micro- and macroconidia of one recently isolated strain were characteristic of *T. gallinae*. The physiological and morphological characters of the two species are summarized.

172. La Touche (C. J.). **Some observations on ringworm in Calves due to Trichophyton discoides Sabouraud.**—Reprinted from *Vet. Rec.*, 64, 841, 2 pp., 2 pl., 1952.

During the three-year-period beginning in May, 1949, 24 patients with calf ringworm (*Trichophyton discoides*) [1, Nos. 359, 1242, 1270] attended the skin clinic of the Leeds General Infirmary, of whom 19 reported that the disease was present on the farms (mostly local and all in Yorkshire) where they were working. Some of those visited by the writer had a high proportion of infected animals (25 on one). Information is presented on the symptomatology of the complaint, the general microscopic appearance of material obtained from ringworm lesions in calves, and the appearance of *T. discoides* in relation to calf hair and in epithelial debris.

173. Baker (K. C.) & Malone (J. T.). **Sporotrichosis. Report of a case.**—*Ariz. Med.*, 9, 1, pp. 28–29, 1952. [Abs. in *Excerpta med., Amst.*, Sect. XIII, 6, 11, p. 534, 1952.]

The first case of sporotrichosis [*Sporotrichum schencki*] is reported from Arizona. Iodide therapy being contra-indicated, the infection (lymphatic variety) was successfully treated with oral sulphonamides.

174. Weiner (M. A.). **Sporotrichosis. Report of a case in Greater Metropolitan Washington.**—*Med. Ann. D.C.*, 20, 11, pp. 606–608, 1 fig., 1951.

Following a summary of the available information on the localized lymphatic type of sporotrichosis (*Sporotrichum schencki*), the most usual form of the disease in the United States, the author describes a case (the first to be reported from Greater Metropolitan Washington) involving the right index finger and forearm in a 3½-year-old boy resident at Bethesda, Maryland. A cure was rapidly effected by the internal administration of potassium iodide.

175. Barrack (B. B.). **Sporotrichosis. With a report on the mycology by R. E. Powell.**—*Med. J. Aust.*, 39 (ii), 18, pp. 624–626, 4 figs., 1952.

The clinical course of a case of sporotrichosis (*Sporotrichum schencki*) in a female patient at the Mater Misericordiae Hospital, Brisbane, is described.

Infection originated from a prick on the dorsum of the middle finger on the right hand and spread up the forearm. A cure was effected between 28th August and 8th October, 1951, by the internal administration of potassium iodide (10 grains thrice daily, increasing to 30 grains or more) and local treatment with compresses of mercuric chloride solution (1 in 5,000), followed by glycerine with ichthyol in 10 per cent. solution. This is believed to be only the second report of sporotrichosis from Australia.

The inoculation of 12-day-old eggs with spore suspensions of the fungus resulted in the development of a few pocks on the chorio-allantoic membrane of the chick, which gave rise in culture to roughly globose, encapsulated, yeast-like forms, 2 to 7 μ in diameter, identical with those described by Kligman and Baldridge [1, No. 2139].

176. Drouhet (E.) & Mariat (F.). **Étude des facteurs déterminant le développement de la phase levure de Sporotrichum schencki.** [Study of factors determining the development of the yeast phase of *Sporotrichum schencki*.]—*Ann. Inst. Pasteur*, 83, 4, pp. 506–514, 1 pl., 1952.

At 37° C. a carbon dioxide tension corresponding to an admixture of 5 per cent. of the gas in the atmosphere promotes the development of the yeast phase of *Sporotrichum schencki* in a synthetic medium, supplemented by pyrimidine or thiamine 10^{-6} and biotin 10^{-8}, whatever the source of nitrogen. In the absence of carbon dioxide, yeast-like elements will develop only in shake cultures containing either casein hydrolysate or certain of its constituent amino acids, separately or mixed, e.g., arginine, glycocoll, or alamine.

177. Reid (J. D.). **A modified Sabouraud medium for the cultivation and identification of Sporotrichum schencki.**—*Amer. J. clin. Path.*, 22, 10, pp. 1030–1033, 1 fig., 1952.

At the Medical College of Virginia, Richmond, the addition to a 'standard' Sabouraud's medium (1 gm. peptone, 5 gm. glucose, 1·5 gm. agar, and 100 ml. water, pH 6·8) of thiamine at concentrations ranging from 10 to 100 μgm. per 100 ml. stimulated both the growth and pigmentation of *Sporotrichum schencki*, the colonies of which were intensely black in comparison with the cream to deep tan coloration of those supplied with 1 μgm. or less of the vitamin. The effect of thiamine was still further enhanced by the addition of a phosphate buffer.

178. Lefrou (G.). **Action curative des sulfones dans un cas de sporotrichose.** [Curative action of sulphones in a case of sporotrichosis.]—*Bull. Soc. Path. exot.*, 43, 9–10, pp. 536–538, 1950.

An ulcerated lesion of a year's standing in the fold of the left elbow of a 40-year-old male native of French Guinea was attributed on the basis of clinical and microscopic observations (cultures were unobtainable) to infection by *Rhinocladium beurmanni* [*Sporotrichum schencki*]. A cure was effected by the ingestion over a 20-day period of sulphone (cimedone) tablets (six a day from the third day onwards, after tolerance had been established by smaller dosages), supplemented by topical applications of zinc oxide ointment.

179. Castleton (K. B.) & Rees (V. L.). **Sporotrichosis : report of two cases from Utah.**—*J. Amer. med. Ass.*, 148, 7, pp. 541–543, 5 figs., 1952.

Two cases of sporotrichosis (*Sporotrichum schencki*), both following injuries and involving the hand and arm, are reported from Salt Lake County, Utah, the patients being males, 55 and 15 years old [1, No. 2548]. The oral administration of potassium iodide at the usual dosage resulted in recovery in both cases.

180. Robinson (C. F.) & Orban (T. D.). **A case of regional lymphatic sporotrichosis.**—*Aust. J. Derm.*, 1, 2, pp. 142–144, 4 figs., 1951.

Sporotrichum schencki was isolated on Sabouraud's agar from a granulomatous ulcer and indurated nodules with broken centres on the palm and back of the right hand and the forearm up to the elbow of a 70-year-old male patient at the Royal Prince Alfred Hospital, Sydney, New South Wales. Infection developed as a sequel to injury to the hand while using manure in the garden. A complete cure was effected in three months by two daily applications of potassium iodide.

181. Drouhet (E.) & Mariat (F.). **Sur le déterminisme du développement in vitro de Sporotrichum schencki sous la forme levure.** [On the determination of the development *in vitro* of *Sporotrichum schencki* in the yeast form.]—*C. R. Acad. Sci., Paris*, 233, 5, pp. 433–435, 1 fig., 1951.

The yeast form of *Sporotrichum schencki*, ordinarily observed only in human and animal tissues or *in vitro* in media with an organic or blood base, is obtainable in shake cultures at 37° C. on a liquid medium of known composition containing amino acids, pyrimidine [2, No. 187], and biotin [1, No. 2034; 2, No. 182].

182. Mariat (F.) & Drouhet (E.). **Rôle de l'anhydride carbonique dans le développement de la phase levure de Sporotrichum schencki.** [Function of carbon dioxide in the development of the yeast phase of *Sporotrichum schencki*.]—*C. R. Acad. Sci., Paris*, 234, 26, pp. 2554–2556, 1952.

The yeast phase of *Sporotrichum schencki* [1, No. 165] develops on a synthetic liquid or agar medium containing ammonium sulphate, pyrimidine, and biotin in the presence of a mixture of carbon dioxide (5 per cent.) and air. In an environment of air alone or mixed with nitrogen the same medium gives rise only to the mycelial phase of the fungus.

183. Nordén (Å.). **Sporotrichosis. Clinical and laboratory features and a serologic study in experimental animals and humans.**—*Acta path. microbiol. scand., Suppl.*, 89, 119 pp., 14 figs., 11 graphs, 1951.

This important study was undertaken at the Duke University School of Medicine, Durham, North Carolina, with a view to finding a reliable serological test of practical applicability in the diagnosis of sporotrichosis (*Sporotrichum schencki*). The most specific antigens were prepared by (1) autoclaving a 15 in 100 suspension of the yeast phase of the fungus, and (2) grinding an acetone-treated yeast phase suspension in a Ten-Broeck tissue-grinder. The material obtained from 11 human cases was too scanty to permit of any definite conclusions as to the relative value of the agglutination, complement-fixation, and precipitin tests, but the last-named appears to be the most sensitive, while a positive complement-fixation may be an index of widespread or deep-seated disease.

184. Schiff (B. L.). **Solitary sporotrichotic granuloma.**—*Arch. Derm. Syph., Chicago*, 65, 3, pp. 353–355, 2 figs., 1952.

Solitary sporotrichotic lesions appear from a perusal of the relevant literature to be a clinical rarity, only two cases having been reported to date. A third case, involving the left forearm of a 31-year-old farmer, is reported from Pawtucket, Rhode Island. *Sporotrichum schencki* was isolated on Sabouraud's dextrose agar from the deep-seated lesion, simulating a Majocchi granuloma and requiring mycological study for its identification. A cure was effected by means of potassium iodide.

185. Thomas (Carmen C.), Pierce (H. E.), & Labiner (G. W.). **Sporotrichosis responding to fever therapy.**—*J. Amer. med. Ass.*, 147, 14, pp. 1342–1343, 1 fig., 1951.

A 40-year-old male patient at the Philadelphia General Hospital with lymphangitic sporotrichosis (*Sporotrichum schencki*) of the hand and forearm of five weeks' duration showed regression of lesions after fever therapy with intravenal typhoid vaccine for an unrelated uveitis. A subsequent attempt at hyperthermia with a Liebel-Flarsheim (Kettering) Hypertherm Fever Cabinet (nine hours at over 103° F.) markedly decreased the size of the lesions and led to a negative culture. Treatment was completed by the oral administration of potassium iodide (total of 120 gm.). Skin tests with sporotrichosis vaccine were positive, with sporotrichin negative.

186. Van den Akker (S.). **Een schimmelinfectie (Cephalosporium potronii) in de mondholte van een Kat.** [A fungal infection (*Cephalosporium potronii*) in the oral cavity of a Cat.]—*Tijdschr. Diergeneesk.*, 77, pp. 515–516, 2 figs., 1952. [English summary. *V.B.*, 22, No. 3658.]

A tumour-like condition caused by *Cephalosporium potronii* on the ventral side of a cat's tongue is reported from Holland.

187. Drouhet (E.) & Mariat (F.). **Action de quelques composés pyrimidiques sur la croissance de Sporotrichum schencki.** [Action of some pyrimidic compounds on the growth of *Sporotrichum schencki*.]—*Ann. Inst. Pasteur*, 82, 1, pp. 114–118, 3 graphs, 1952.

Of 22 pyrimidic compounds tested, none proved to be capable of replacing the pyrimidine of thiamin as a growth factor for *Sporotrichum schencki* [2, Nos. 181, 182]. Four inhibited the development of the fungus, one (methyl-2-dihydroxy-4-6 phenylazo-5 pyrimidine) totally.

188. Mason (L. M.), McCormick (W. C.), & Glosson (J. R.). **Cutaneous sporotrichosis : report of two cases.**—*J. Indiana med. Ass.*, 44, 1, p. 31, 1951.

Two cases of sporotrichosis (*Sporotrichum schencki*) are reported from Indiana, one in a 42-year-old male horticulturist and the other in a five-year-old boy. Infection in both patients was probably contracted through the prick of a barberry thorn [1, Nos. 164, 1563].

189. Ainsworth (G. C.). **Medical mycology. An introduction to its problems.**—pp. ix+105, 8 pl., 7 figs., 1952. London: Sir Isaac Pitman & Sons, Ltd. 15*s*.

Text books on medical mycology sometimes exhibit a tendency, depending upon the special interest and experience of the writer, to present the subject in a predominantly clinical or pathological aspect, to the relative neglect of the mycological interest. In Dr. Ainsworth's book, which is a welcome change from the stereotyped catalogue of fungus diseases, a fair balance has been preserved between these related, if sometimes rival, interests.

An introductory chapter is devoted to the history of medical mycology, the nomenclature of fungus diseases, certain characters of the pathogenic fungi, the geographical distribution of the mycoses and the distinctive features of these infections.

For descriptive purposes, the fungus diseases are divided, mainly on clinical and epidemiological bases, into four large groups: mycoses of the skin, mycoses of the respiratory tract, mycetoma and chromoblastomycosis, and the systemic mycoses, and each group is used to illustrate some problem of medical mycology. In connexion with the mycoses of the skin, the ringworm fungi provide the background to a consideration of the problem of taxonomy.

The mycoses of the respiratory tract focus attention on the importance of an examination of the problem of the pathological significance, when found in sputum, of potentially pathogenic fungi which may also be known as commensals or contaminants in the healthy mouth. Mycetoma and chromoblastomycosis illustrate the problem of the plurality of fungus species which are capable of causing a similar kind of pathological condition. The systemic mycoses provide the material for a discussion on the absorbing phenomenon of dimorphism in pathogenic fungi and its possible relationship to pathogenicity of the fungus and the epidemiology of the disease. A chapter on serological reactions and specific dermal sensitivity includes a discussion of the problem of specific diagnosis and the application of dermal sensitivity tests to epidemiological studies.

Two subjects, not often included in books on medical mycology, occupy the last two chapters; these are air-borne fungus spores in the role of allergens, and poisonous fungi.

References to the relevant literature are appended to each chapter and the work is completed by a general bibliography and an index.

This little book, which embodies the most recent advances in medical mycology, is a model of clear and concise descriptive writing and it offers a sound and attractive introduction to the subject which will appeal not only to the medical profession but to all microbiologists.

190. **Fungi.**—*Indian med. Gaz.*, 87, 6, pp. 257–261, 1952.

This article contains an extremely brief and simplified account of the fungi, followed by a somewhat more detailed review of fungi pathogenic to man, with descriptions of the diseases they cause.

191. Carter (C. F.) & Smith (Alice L.). **Microbiology and pathology.** Fifth edition.—847 pp., 260 figs., St. Louis, Missouri, The C. V. Mosby Company; London, Henry Kimpton, 1953.

Chapter 33 (pp. 412–426) of this treatise comprises brief observations on moulds, yeasts, and some important fungal pathogens of man and animals.

192. Wegmann (T.). **Diagnose und Therapie der Pilzerkrankungen der Lunge.** [Diagnosis and therapy of fungal diseases of the lung.]—*Schweiz. med. Wschr.*, 83, 30, pp. 687–689, 1953.

This is a review of 32 contributions to the literature on the diagnosis and therapy of pulmonary mycoses.

193. Mackinnon (J. E.), Artagaveytia-Allende (R. C.), & García-Zorrón (Noemí). **Micoteca del Instituto de Higiene de la Facultad de Medicina de Montevideo. La coleccioń de cultivos.** [Mycotheca of the Institute of Hygiene of the Faculty of Medicine of Montevideo. The culture collection.]—*An. Inst. Hig. Montevideo*, 4, pp. 185–197, 1950 (issued 1951).

A numbered list is given of the fungus cultures maintained at the Institute of Hygiene, Montevideo, Uruguay, with indications of the provenance of each.

194. Mackinnon (J. E.), Gurri (J.), & Vinelli (H.). **La membrana de la forma parasitaria de varios agentes de micosis profundes.** [The membrane of the parasitic form of various agents of deep mycoses.]—*An. Inst. Hig. Montevideo*, 4, pp. 90–91, 1950 (issued 1951.) [English translation.]

Some of the information in this summary of a paper presented at the Fifth International Congress of Microbiology in Rio de Janeiro has already been noticed from other sources [1, Nos. 1641, 1642, 1877]. The membrane of *Sporotrichum schencki* was the thinnest of all those studied in tissue sections

stained with Best's carmine. The inner part of the thick membrane of the spherules of *Coccidioides immitis* is carminophyllic. The somatic membrane of *Torulopsis* [*Cryptococcus*] *neoformans* stained deeply and the mucilaginous capsule [1, No. 2113; 2, No. 37] faintly with carmine; on the other hand, the latter reacted strongly to mucicarmine.

195. Pinto-Lopes (J.), Van Uden (N.), & Garcia-Cabral (R. V.). **Mycological abstracts 1950 (covering the whole Portuguese mycological literature).**—21 pp., Departamento de Micologia, Instituto Botánico, Faculdade de Ciências de Lisboa, 1951.

English and German reviews are given of Portuguese contributions to the literature on general and medical mycology (seven and ten titles, respectively), published during 1950.

196. Zapater (R. C.). **Diagnóstico histológico de micosis (pruebas experimentales).** [Histological diagnosis of mycosis (experimental tests).]—*Rev. Asoc. bioquím. argent.*, 17, 79, pp. 9–17, 8 figs., 1952. [Abs. in *Excerpta med., Amst.*, Sect. XIII, 7, 3, p. 122, 1953.]

Actinomyces israeli can be identified by the typical yellow grains in the pus from lesions or sputum. *Cryptococcus neoformans* is easily obtainable in pure culture on Sabouraud's medium from the lesion induced by the injection of a patient's sputum into the rat. *Sporotrichum schencki* can be collected by aseptic puncture of the subcutaneous nodules in the patient and intraperitoneal injection into the rat, in which numerous typical cigar-shaped elements are formed. *Histoplasma capsulatum* and *Paracoccidioides brasiliensis* are identifiable in lesions in the testicle of the guinea-pig three weeks after local inoculation, and *Coccidioides immitis* after a week.

197. Baker (R. D.). **Resectable mycotic lesions and acutely fatal mycoses.**—*J. Amer. med. Ass.*, 150, 16, pp. 1579–1581, 1952.

Information is presented from the author's personal experience at the Medical College of Alabama and a review of eight contributions to the relevant literature, on the efficacy of resection of pulmonary mycotic lesions in the following order: cryptococcosis [*Cryptococcus neoformans*], coccidioidomycosis [*Coccidioides immitis*], blastomycosis [*Blastomyces dermatitidis*: see below, No. 262], and histoplasmosis [*Histoplasma capsulatum*]. Mycotic diseases are generally chronic, but mucormycosis (? *Mucor* spp.) and blastomycosis tend to assume an acute form simulating bacterial or viral infections and terminating fatally.

198. De Larramendi (A. E. M.). **Micosis viscerales en la infancia.** [Visceral mycoses in children.]—*Rev. esp. Pediat.*, 7, 6, pp. 803–817, 1951. [English, French, and German summaries.]

This is a revision of the clinical and anatomo-pathological aspects of histoplasmosis (*Histoplasma capsulatum*) [1, No. 2445], coccidioidomycosis (*Coccidioides immitis*) [1, No. 2427], and torulosis (*Torula histolytica*) [*Cryptococcus neoformans*: 1, No. 2414] affecting the viscera of children.

199. Bocobo (F.). **Nutrition and metabolism of pathogenic fungi.**—*J. Philipp. med. Ass.*, 28, 10, pp. 598–612, 1 fig., 1952.

This review from the University of Michigan Hospital, Ann Arbor, covers the nutrition of the pathogenic fungi, the physico-chemical factors affecting their growth, their metabolic products, including the immunologic and tissue

reactions caused by the polysaccharides and lipids, and the respiration of the organisms. There is a bibliography of 66 titles.

200. Chinn (H. I.), Mitchell (R. B.), & Arnold (Anna C.). **Relation of chemical structure to fungistatic activity.**—*J. invest. Derm.*, 20, 3, pp. 177–184, 1953.

Of 42 compounds tested at the USAF School of Aviation Medicine, Randolph Field, Texas, against *Trichophyton mentagrophytes*, *Microsporum canis*, *Monosporium apiospermum* [2, No. 94], *Phialophora verrucosa*, *Sporotrichum schencki*, and *Candida albicans*, Geigy 20704 and 21772 (1,10 phenanthroline and 2,9 dimethyl 1,10 phenanthroline) showed the maximum fungistatic activity over the widest spectrum, inhibiting the growth of all the organisms at a range of < 0·001 to 0·05 M. The phenothiazine derivatives, lisergan, phenergen, and lergigan [2, No. 8] also suppressed the development of all the fungi at or below 0·1 M. Fungistatic activity was generally enhanced by chlorination and bromination and still further increased by the substitution of two chlorine atoms. In tests with 29 compounds against *Coccidioides immitis* the most actively fungistatic (at 0·1 M) were Geigy 20704 and 21772 and Merrell 354 R-285a 063002 (beta diethylamino ethyl 1 methyl 3 isopropyl cyclopentanecarboxylate hydrochloride).

201. Despois (R.). **Les antibiotiques produits par les Actinomyces.** [Antibiotics produced by *Actinomyces*].—*Produits pharm.*, 7, 1, pp. 18–22; 2, pp. 73–78, 1952.

Following some introductory information on the taxonomy and history of the actinomycetes and on the general methods used in the search for new antibiotics produced by *Actinomyces* spp., detailed studies are presented on chloramphenicol, aureomycin, and neomycin, supplemented by briefer observations on actidione and fradicin.

202. Bender (I. B.) & Seltzer (S.). **Combination of antibiotics and fungicides used in treatment of the infected pulpless tooth.**—*J. Amer. dent. Ass.*, 45, 3, pp. 293–300, 5 figs., 1952.

In the treatment of the infected pulpless tooth by filling the canal with antibiotic pastes, the authors, working in Philadelphia, found it necessary to include a fungicide in the preparation to eliminate various [unspecified] fungi and yeasts. Sodium undecylenate and sodium caprylate were tried in combination with various antibiotics, and of the two the caprylate was found to be the more effective. The fungal infections were more difficult to eliminate than the bacterial.

203. Hosoya (S.), Komatsu (N.), & Soeda (M.). **An antifungal agent isolated from mycelium of Streptomyces griseocarneus.**—*Jap. J. exp. Med.*, 22, 1, pp. 23–25, 1952.

A substance isolated from the mycelium of a hydroxystreptomycin-producing strain of *Streptomyces griseocarneus* at the Institute for Infectious Diseases, University of Tokyo, closely resembles rotaventin, produced by the mycelium of *S. reticuli* H-365 (*Jap. J. exp. Med.*, 21, 1951), in its antibiotic spectrum and chemical properties. Among other organisms inhibited are *Trichophyton mentagrophytes* and *T. interdigitale*. [This information also appears in Japanese, with an English summary, in *J. Antibiot.*, 5, pp. 525–527, 1952.]

204. Ikeda (Y.), Hirai (T.), & Nishimaki (T.). **Studies on the antifungal antibiotics from actinomycetes.**—*J. Antibiot.*, 3, 11, pp. 726–729, 1950. [Japanese, with English summary.]

The crude powder of the filtrate from a strain of *St*[*reptomyces*] resembling

S. antibioticus was active against *Trichophyton purpureum* [*T. rubrum*] and *Saccharomyces* spp. but failed to inhibit the growth of any of the other organisms tested.

205. Kligman (A. M.) & Lewis (Florence S.). **In vitro and in vivo activity of candicidin on pathogenic fungi.**—*Proc. Soc. exp. Biol., N.Y.*, 82, 3, pp. 399–404, 1953.

At the University of Pennsylvania School of Medicine the water-soluble fraction of candicidin exerted a powerful fungistatic and fungicidal action on certain major agents of human mycoses. The antibiotic conferred a marked degree of protection on mice inoculated with *Candida albicans*, *Blastomyces dermatitidis*, and *Sporotrichum schencki*, but was ineffectual against *Coccidioides immitis* and the causal organisms of tineas (*Trichophyton*, *Microsporum*, and *Epidermophyton* spp.) and only partially effective against *Cryptococcus neoformans* and *Histoplasma capsulatum*.

206. Maeda (K.), Okami (Y.), Taya (O.) & Umezawa (H.). **Antifungal substances, phaeofadin and moldin, produced by Streptomyces.**—*Jap. J. med. Sci.*, 5, pp. 327–339, 1952. [Abs. in *Chem. Abstr.*, 47, 12, p. 5986, 1953.]

At the National Institute of Health, Tokyo, filtrates from cultures of a mould (108A–1) resembling *Streptomyces phaeochromogenus* on a medium containing 5 per cent. each of meat extract and potassium phosphate, 1 per cent. glucose, and 0·5 per cent. each of peptone and sodium chloride, yielded a substance designated moldin, which strongly inhibited the growth of *Torula* sp., *Trichophyton* sp., *Histoplasma capsulatum*, *Achorion* [*M.*] *gypseum*, and *Cryptococcus neoformans*, and was fairly active against *Trichosporon beigelii*, *Penicillium chrysogenum*, and *Nocardia asteroides*; it also retarded the development of *Candida* sp.

Another strain (T-23), *S. phaeofaciens*, produced on a medium consisting of 1 per cent. maltose, 2 to 3 per cent. maize steep liquor, 0·5 per cent. peptone, and 0·3 per cent. sodium chloride a substance named phaeofacin, which exerts a strong inhibitory action on *H. capsulatum* and *Trichophyton gypseum* [*T. mentagrophytes*] and is fairly effective against *Torula* [*Torulopsis*] *utilis*, *Trichophyton* sp., *Cryptococcus neoformans*, and *Aspergillus* sp.

207. Loefer (J. B.) & Weichlein (R. G.). **Growth response of certain fungi to polymyxin and neomycin.**—*Tex. J. Sci.*, 4, 4, pp. 541–544, 1952.

At the Southwest Foundation for Research and Education, San Antonio, Texas, polymyxin B, added to liquid cultures of *Candida albicans*, inhibited growth at concentrations of 250 units per ml. and upwards [1, Nos. 1539, 2312], but the fungus was stimulated by crude neomycin [1, No. 1878] at concentrations up to 750 units per ml. and not suppressed by neomycin B sulphate even at a strength of 3,000 units. On the other hand, neomycin appreciably inhibited the development of *Trichophyton mentagrophytes* in amounts as low as 24 units per ml.

208. Raubitschek (F.), Acker (R. F.), & Waksman (S. A.). **Production of an antifungal agent of the fungicidin type by Streptomyces aureus.**—*Antibiot. & Chemother.*, 2, 4, pp. 179–183, 1 graph, 1952.

At the New Jersey Agricultural Experiment Station an antibiotic, deposited in the culture collection as No. 3569, with an anti-fungal spectrum similar to that of fungicidin [1, No. 1873 and next entry] was isolated from *Streptomyces aureus*. The amounts required to inhibit the growth of *Candida albicans*,

Cryptococcus neoformans, and *Blastomyces dermatitidis* (yeast phase) were 1·7, 1·4, and 1·5 μ gm. per ml., respectively. Tested against *Candida albicans* in embryonated eggs, No. 3569 exerted a protective action.

209. Brown (Rachel), Hazen (Elizabeth L.), & Mason (Alice).—**Effect of fungicidin (nystatin) in Mice injected with lethal mixtures of aureomycin and Candida albicans.**—*Science*, 117, 3048, pp. 609–610, 1953.

In experiments at the New York State Department of Health, ten white mice (Albany strain) injected with a mixture of aureomycin and *Candida albicans* No. 4657 [1, No. 2482] died in 24 hours, whereas seven of ten given *C. albicans* alone survived from two to 12 days, three appearing to be well after 16. When a single injection (3 mg.) of fungicidin [see preceding entry] was administered two hours before or at the time of infection, ten of 15 mice were alive after 16 days. When administration was delayed until two hours after infection a single dose saved only one of five mice, whereas continued treatment saved three. Fungicidin administered four hours before or after infection conferred no protective effect, apart from delaying death, but one dose of fungicidin given subcutaneously two hours before inoculation with an otherwise lethal mixture of *C. albicans* and aureomycin was strongly protective.

210. Aiso (K.), Arai (T.), Shidara (I.), Ogi (K.), & Tanaami (T.). **Studies on the Streptomyces antibiotics active against fungi and yeast. IV. On the biological activity of mycelin.**—*J. Antibiot.*, 5, 9, pp. 488–491, 6 figs., 1952. [Japanese, with English summary.]

In experiments at the Institute for Putrefaction Research, Chiba University, Japan, an extract from *Streptomyces roseoflavus* designated mycelin exerted an inhibitory action on *Trichophyton interdigitale*, *T. purpureum* [*T. rubrum*], and *Candida albicans*. Its activity was reduced by a high percentage of glucose and by increasing the acidity of the medium and enhanced by an alkaline reaction. Guinea-pigs inoculated with *T. rubrum* reacted favourably to treatment with 0·005 per cent. mycelin in a hydrophilic ointment base.

211. Wolff (L.) & Teusch (W.). **Das Aktinomykoseproblem.** [The problem of actinomycosis.]—*Münch. med. Wschr.*, 94, 33–34, pp. 653–658, 1952.

This discussion of the problem of actinomycosis (*Actinomyces israeli* and other Actinomycetales) is based on a study of 28 cases of the disease at the Institute for Hygiene and Infectious Diseases, Saarbrücken, Germany, in the spring of 1951.

212. Erikson (D.) & Porteous (J. W.). **The cultivation of Actinomyces israelii in a progressively less complex medium.**—*J. gen. Microbiol.*, 8, 3, pp. 464–474, 1 pl., 1953.

At the University of Aberdeen six strains of *Actinomyces israeli* [1, No. 2228] were induced to grow in confined subculture on a medium composed of 99 volumes of 1 per cent. casein hydrolysate plus 1 volume of heart broth, the mixture containing 0·5 per cent. (w/v) glucose. Poor growth of limited viability was obtained in a medium consisting of 1 per cent. casein hydrolysate plus 0·5 per cent. glucose (w/v) only. The addition of a wide variety of amino acids, fatty acids, growth factors, and mineral salts to certain of the less complex media did not compensate for the partial or complete omission of heart broth. Of the glucose supplied in relatively complex media about 40 per cent. was utilized and lactic acid equivalent to 30 to 60 per cent. of the glucose utilized appeared in the medium.

213. Gruber (M. D.). **Actinomycosis and fracture of the mandible.**—*Oral Surg.*, 5, 8, pp. 809–815, 9 figs., 1952.

The organism isolated in pure culture from the pus in the submandibular space of a 21-year-old female patient at University Hospital, Sac City, Iowa, following fracture of the mandible in a motor accident, was identified as [the aerobic] *Actinomyces graminis*. Details are given of the methods of treatment adopted, which included the administration of penicillin and potassium iodide.

214. Salatitch (B.). **Quelques cas d'actinomycose.** [Some cases of actinomycosis.] —*Rev. Stomat., Paris*, 53, 7, pp. 583–586, 1952.

Following a number of references to previous investigations on the antibiotic therapy of actinomycosis, the writer briefly reports from the Charity Hospital, New Orleans, United States, the cure of a maxillary infection, which developed after the extraction of the lower left wisdom tooth, by combined surgical intervention and the joint administration of terramycin and penicillin.

215. Zegarelli (E. V.), Lane (S. L.), Syrop (H. M.), & Kutscher (A. H.). **Actinomycosis of the jaw treated with terramycin.**—*Oral Surg.*, 5, 11, pp. 1182–1184, 3 figs., 1952.

This is a report from New York of the successful treatment by systemic terramycin therapy of an infectious lesion of the lower jaw, from which a micro-organism with the cultural characteristics of *Actinomyces bovis* [*A. ? israeli*] was isolated.

216. Heidsieck (C.). **Über tumorförmige Aktinomykose des Unterkiefers.** [Tumor-like actinomycosis of the lower jaw.]—*Zbl. Chir.*, 77, 29, pp. 1201–1211, 6 figs., 1952.

Some important contributions to the literature on the very rare osseous actinomycosis are referred to in connexion with a case involving the lower jaw of a six-year-old boy at the Dental Clinic of the Martin Luther University, Halle-Wittenberg, Germany, which is fully described. The steadily growing tumour was removed by unilateral resection of the jaw with exarticulation and an uncomplicated recovery was made.

217. Ingalls (E. G.) & Merendino (K. A.). **Actinomycosis of the female genitalia ; case report and review of the literature.**—*West. J. Surg.*, 60, 9, pp. 476–479, 1 fig., 1952.

The pathogenesis of pelvic actinomycosis (*Actinomyces bovis* [*A. israeli*]) is still conjectural, but the most likely route of infection appears to be via the gastro-intestinal tract to the pelvic viscera. The over-all mortality rate from the disease probably exceeds 75 per cent. Penicillin, sulphadiazine, and the more recent antibiotics retard the course of infection but do not cure the disease. From the Mayo Clinic a case, apparently originating in the ovary, is presented as 'cured' following radical surgery. In any intractable case of chronic pelvic inflammation the possibility of actinomycosis should be considered.

218. Lamb (J. H.), Kelly (Florence), Shackelford (P. O.), Rebell (G.), & Koons (R. C.). **Pregnenolone acetate in treatment of mycetoma (nocardiosis).** —*Arch. Derm. Syph., Chicago*, 67, 2, pp. 141–145, 1953.

At the Oklahoma Medical Research Institute and Hospital, Oklahoma City, pregnenolone acetate (a steroid compound), administered orally at a dosage of 200 or 300 mg. daily for eight months, produced an apparent cure in a case of intractable mycetoma involving the left foot of a six-year-old girl following injury from a pitchfork to the dorsal aspect of the astragalus bone. The causal organism was an atypical strain of *Nocardia asteroides*.

219. O'Reilly (M. J. J.) & Powell (R. E.). **Report of a case of nocardial infection in Australia.**—*Med. J. Aust.*, 40 (i), 20, pp. 703–705, 1953.

A fatal case of pontine abscess caused by *Nocardia asteroides*, following an injury to the right side of the head, in a 44-year-old male patient is reported from the Brisbane General Hospital. This is stated to be the second record of the organism as an agent of human infection in Australia. Positive results were obtained in inoculation experiments on the rabbit, the guinea-pig, and the chick embryo.

220. Lane (S. L.), Kutscher (A. H.), & Chaves (R.). **Oxytetracycline in the treatment of orocervical facial actinomycosis.—Report of seven cases.**—*J. Amer. med. Ass.*, 151, 12, pp. 986–988, 1953.

The successful treatment of seven proved cases of orocervical facial actinomycosis (*Actinomyces bovis*) [*A. israeli*] with oxytetracycline hydrochloride in divided dosages ranging from 750 to 2,000 mg. daily for two to six weeks is reported from New York. Only one of the patients required a second and apparently final course of treatment, the others still being free of disease at follow-up examinations after periods of six to 18 months. Six of the subjects were males, the youngest (a negro) aged 15 and the oldest 51, and the seventh a 13-year-old girl.

221. Lorenz. **Die cervico-faciale aktinomykotische Mischinfektion — eine stomatogene Infektion.** [Cervico-facial actinomycotic mixed infection—a stomatogenic infection.]—*Med. Mschr.*, 6, 9, pp. 580–584, 4 figs., 1952.

The author's practical experience at the Hüttenhospital, Dortmund, Germany, is advanced to illustrate his argument that mixed cervico-facial actinomycotic infection in man arises from stomatogenic invasion by *Actinomyces israeli*, which may become pathogenic in the presence of certain commensals in the oral cavity. Therapy should be based on conservative surgical procedures, the administration of potassium iodide, and X-ray irradiation, supplemented in severe cases by measures to build up the defences and, if necessary, by combined antigen-penicillin therapy, using the antibiotic at a dosage of 10,000,000 units.

222. Schneider (G.). **Die zerviko-faziale Aktinomykose im Lichte diagnostischer Betrachtungen.** [Cervico-facial actinomycosis in the light of diagnostic considerations.]—*Dtsch. Zahn-, Mund- u. Kieferheilk.*, 16, 9–10, pp. 396–424; 11–12, pp. 457–464, 39 figs., 1952.

Clinical material from over 100 cases of cervico-facial actinomycosis (*Actinomyces*) [*israeli*]) collected during the past six years at the Dental Clinic, Leipzig, Germany, forms the basis of this exhaustive critical study on different methods of diagnosis.

223. Merle-Béral (M. J.). **Contribution à l'étude du traitement des actinomycoses cervico-faciales.** [Therapy of cervico-facial actinomycoses.]—*Rev. Stomat., Paris*, 53, 7, pp. 426–431, 1952.

In four cases of cervico-facial actinomycosis [*Actinomycosis israeli*] at Albi France, promising results were obtained by injections of lymphnode extracts.

224. Zitka (E.). **Tödlich verlaufene Fälle von zervikofazialer Aktinomykose.** [Fatal cases of cervico-facial actinomycosis.]—*Wien. med. Wschr.*, 102, 47, pp. 939–941, 1 fig., 1952.

Nine fatal cases of cervico-facial actinomycosis [*Actinomyces israeli*],

covering a 20-year period ending in 1947, are reported from the Surgical University Clinic, Vienna. In five the pathogen migrated upwards to the base of the cranium and induced osteomyelitis, culminating in meningitis or cerebral abscess, while in the others it descended through the muscular system of the neck and back to the vertebral column, pleura, and lung parenchyma. The absence of fatalities since 1948 is attributed to vaccine therapy in the reactive initial stage of the disease and antibiotic treatment combined with blood transfusion in advanced cases.

225. Bennett (D. T.). **A case of cervico-facial actinomycosis.**—*Brit. dent. J.*, 94, 6, pp. 154–155, 1953.

Actinomyces israeli was isolated at the London Hospital Dental Department from a swelling in the right lower jaw of a 52-year-old male public baths attendant four months after the extraction of two teeth. A cure was effected by means of intramuscular penicillin therapy.

226. Gold (L.) & Doyne (E. E.). **Actinomycosis with osteomyelitis of the alveolar process.**—*Oral Surg.*, 5, 10, pp. 1056–1063, 2 pl., 1952.

Following a brief general account of actinomycosis the authors present from the Dental School, University of Pennsylvania, the case of a ten-year-old boy whose mandibular right first molar tooth and its alveolar bed of bone were heavily infected by *Actinomyces israeli*, identified by microscopic examination of the infected tissues after surgical removal. High concentrations of penicillin and streptomycin, used locally at the seat of infection, did not control the mycosis, necessitating parenteral penicillin and surgical drainage for treatment of the disease. The organism probably gained entry to the tooth through a carious lesion and its pulpal extension.

227. Moore (J. G.). **Actinomycosis of the canaliculi with invasion of tissue in one case.**—*Brit. J. Ophthal.*, 36, 9, pp. 522–524, 1 fig., 1952.

Six cases of actinomycosis of the canaliculi are reported from London, and one, in which the tissue was also invaded, is described in detail, the causal organism having been isolated and identified as *Actinomyces bovis* [*A.* ? *israeli*]. Treatment by splitting the punctum and curettage of the concretions, effected a complete cure in every case.

228. Smith (C. H.). **Ocular actinomycosis.**—*Proc. roy. Soc. Med.*, 46, 3, pp. 209–212, 8 figs., 1953.

The author describes the cultural and morphological characters of 11 strains of *Actinomyces*, tentatively referred to *A. israeli*, which were isolated from 15 cases of ocular actinomycosis during the last six months at the Institute of Ophthalmology, London. An unusual feature of the series was the inclusion of three males, the youngest of whom was 19, the disease normally occurring predominantly in females between 40 and 50 or up to 60 years old.

229. Canto Borreguero (G.). **El estudio micológico del material broncoscópico en el diagnóstico de las actinomicosis respiratorias.** [The mycological study of bronchoscopic material in the diagnosis of respiratory actinomycoses.]—*Rev. clín. esp.*, 46, 6, pp. 359–363, 11 figs., 1952. [English, German, and French summaries.]

Not only the sputum should be examined in the study of respiratory mycoses, since the organisms may also be present in the fluid obtained by aspiration from the bronchi, by culture, or by endoscopic biopsy. The pathogenic status of those genera of the Actinomycetales conventionally regarded as

saprophytic or rare requires revision. The marked pleomorphism of the forms occurring in the secretions should be taken into account; the granules are only one of the resistant types.

230. D'Eshougues (J. R.) & Zaffran (A.). **Le diagnostic et le traitement actuel de l'actinomycose pulmonaire.** [The diagnosis and current treatment of pulmonary actinomycosis.]—*Algérie méd.*, 36, 2, pp. 83–91, 1952.

An account is given of the clinical aspects, diagnosis, and treatment of pulmonary actinomycosis (*Actinomyces israeli*) [1, No. 2390]. Current treatment consists of administering orally 4 to 6 or even 8 gm. sulphadiazine daily for three to six months (the pleural method is used in cases of empyaema); penicillin, with or without sulphonamides, at a minimum daily dose of 1,000,000 units, given every three hours or in two daily injections, for four to six weeks; or streptomycin (1 to 1·5 gm.) administered in one or two daily injections for four to seven weeks. In June, 1949, a case [in Algeria] was definitely cured by a daily dose of 1 gm. streptomycin for 44 days.

231. Gombert (H. J.). **Beitrag zur Röntgendiagnose und -therapie der Lungenaktinomykose.** [Contribution to the roentgen diagnosis and therapy of pulmonary actinomycosis.]—*Fortschr. Röntgenstr.*, 77, 5, pp. 578–581, 3 figs., 1952. [English, French, and Spanish summaries.]

Three forms of pulmonary actinomycosis (primary, secondary, and metastatic) are differentiated and their variable roentgenological aspects briefly described as an introduction to a report of a case in a 49-year-old female patient at the Municipal Hospital, Neukölln, Germany, whose sputum yielded a mixed flora of *Oidium* [*Candida*] *albicans* and *Actinomyces* Wolff-Israel [*A. israeli*]. The administration of bacteriostatics (penicillin and supronal) prior to X-ray irradiation is believed to have contributed to the successful outcome of the treatment.

232. Petříková (Jitka) & Vaněček (R.). **Aktinomykosa plic.** [Actinomycosis of the lungs.]—*Čas. Lék. čes.*, 92, 20–21, pp. 559–562, 1953. [Russian summary.]

A case of metastatic pulmonary actinomycosis (*Actinomyces israeli*), with the primary focus of infection in the appendix, is reported in a 21-year-old male patient at a tubercular clinic in Czechoslovakia. The liver became involved shortly and the lungs a year after appendicectomy, and death occurred six months later. The diagnosis was not established until the autopsy, when histological examination revealed the cause of the illness.

233. Ocklitz (H. W.). **Aureomycinbehandlung der Lungen-Aktinomycose.** [Aureomycin therapy of pulmonary actinomycosis.]—*Ther. der Gegenw.*, 91, 8, pp. 291–294, 4 figs., 1952.

The favourable results obtained by Wright and Lowen [1, No. 1833] and McVay and collaborators [1, No. 2075] in the treatment of actinomycosis (*Actinomyces israeli*) with aureomycin were confirmed by the author in a case of long-standing pulmonary involvement in a 13-year-old girl at the Children's Clinic, Rostock, Germany. The inconclusive outcome of combined sulphonamide and penicillin therapy in a similar case is cited by way of comparison.

234. Subramaniam (R.). **Actinomycosis of the lung.**—*J. Indian med. Ass.*, 21, 8, p. 367, 1952.

A fatal case of pulmonary actinomycosis [*Actinomyces israeli*], which occurred some years ago in a 45-year-old male patient, is reported from the Government General Hospital, Madras. Potassium iodide and deep X-ray therapy, combined with surgical measures, failed to effect a cure, and at that time penicillin was not available.

235. Rumrich (A.). **Zur Klinik und Therapie der Bronchusaktinomykose.** [On the clinical course and therapy of bronchial actinomycosis.]—*Dtsch. med. Wschr.*, 78, 23, pp. 854–855, 1953.

From the District Hospital, Ludwigsburg, Germany, the author reports a case of bronchial actinomycosis (*Actinomyces bovis*) [*A. israeli*] in a 32-year-old female agricultural worker. The initial symptoms, which developed after chewing grass stalks, were haemorrhagic bronchitis and bronchial stenosis. A cure was effected by means of combined penicillin and sulphonamide (protocide) therapy, supplemented by the inhalation of penicillin through an aerosol apparatus and later by the customary administration of potassium iodide.

236. McVay (L. V.) & Sprunt (D. H.). **A long-term evaluation of aureomycin in the treatment of actinomycosis.**—*Ann. intern. Med.*, 38, 5, pp. 955–966, 5 figs., 1953.

Recent progress in the therapy of actinomycosis (*Actinomyces bovis*) [*A. israeli*] by means of aureomycin [2, Nos. 11, 12, 233] is reviewed, with special reference to its use in cases of the cervico-facial form at the John Gaston Hospital, Memphis, Tennessee, two being described in detail.

237. Waterson (A. P.) & Wedgwood (J.). **Rat-bite fever. Report of a case due to Actinomyces muris.**—*Lancet*, 264, 6758, pp. 472–473, 1 graph, 1953.

A case of rat-bite fever in a 50-year-old farm foreman, a patient at Addenbrooke's Hospital, Cambridge, was caused by *Actinomyces muris*[*-ratti*] and accompanied by arthritis and a pustular rash. Response to the intramuscular administration of penicillin, totalling 15,750,000 units in 11 days, was prompt and complete.

238. Bieberdorf (F. W.). **Actinomycosis of a bovine testis.**—*J. Amer. vet. med. Ass.*, 122, 910, pp. 49–50, 1953.

From San Antonio, Texas, the author reports the isolation from the semen of a Hereford bull, following injury to the scrotum and right testis, of an actinomycete, probably a strain of *Actinomyces bovis*. It grew readily on thioglycollate broth under anaerobic conditions but aerobic development on a peptone medium was slow.

239. Andres (J.). **Über die Kieferaktinomykose des Rindes und über die Aktinomykose im Allgemeinen.** [On maxillary actinomycosis in Cattle and on actinomycosis in general.]—*Schweiz. Arch. Tierheilk.*, 94, 11, pp. 694–712, 10 figs., 1952. [French, Italian, and English summaries.]

This important paper opens with a survey of the available information on bovine actinomycosis, with special reference to the clinical and anatomo-pathological aspects of the maxillary form, and a critical discussion of the taxonomy of the causal organisms (referred to *Corynebacterium israeli*, *Actinobacillus lignieresi*, *Bacterium pyogenes*, and *Staphylococcus pyogenes*). A severe case of the disease in a three-year-old bull is then reported from the Veterinary Clinic of the University of Zürich, in which the pathological processes were retarded for $2\frac{1}{2}$ years by combined iodine and penicillin therapy.

240. Story (L. F.). **Bluestone absorbed by wool affects processing.**—*N.Z. J. Agric.*, 85, 6, pp. 501, 503, 2 figs., 1952.

Copper sulphate is used in dips by sheep-farmers in New Zealand to control mycotic dermatitis (*Actinomyces dermatonomus*) [1, No. 1598]. The fungus affects small, circular patches of skin, inducing the formation of an exudate which hardens into horny, conical or cylindrical masses. Dipping in copper

sulphate solution (1 in 500) towards the end of the autumn and sometimes after shearing has given beneficial results, but some of the copper is absorbed by the wool and may cause trouble in processing.

241. Akün (S.). **Nokardiose bei zwei Katzen in der Türkei.** [Nocardiosis in two Cats in Turkey.]—*Dtsch. tierärztl. Wschr.*, 59, pp. 202–204, 1952. [*V.B.*, 23, No. 1194.]

Post-mortem examination of two cats which had suffered, respectively, from purulent submandibular lymphadenitis and exudative pleurisy revealed the presence of *Nocardia* infection. The lungs contained numerous lesions, ranging in size from that of a grain of wheat to a hazel nut.

242. Rankin (N. E.). **Disseminated aspergillosis and moniliasis associated with agranulocytosis and antibiotic therapy.**—*Brit. med. J.*, *1953*, 4816, pp. 918–919, 1953.

A fatal case of generalized aspergillosis and moniliasis is reported from the Royal Infirmary, Gloucester, in a 45-year-old male patient, whose illness began with a staphylococcal abscess in the thigh, followed by pyaemia with pulmonary lesions. Agranulocystis subsequently developed and was treated with chloramphenicol, and this is believed to have promoted the dissemination of aspergillosis and moniliasis, which were revealed at the necropsy and tentatively attributed by Dr. J. T. Duncan, from a study of tissue sections, to *Aspergillus fumigatus* and *Candida* sp., respectively.

243. Monod (O.), Pesle (G. D.), & Labeguerie (M.). **L'aspergillome bronchectasiant.** [Bronchiectasing aspergilloma.]—*J. franç. Méd. Chir. thoraç.*, 6, 3, pp. 229–244, 12 figs., 1952. [Italian and Spanish summaries.]

From a study of nine cases (three of the authors' [? in France], two unpublished of Prof. Orie at Groningen, Holland, and four in the relevant literature) of 'bronchiectasing aspergilloma', the condition is defined as a pulmonary mycelial tumour associated with haemoptyses, absence of Koch's bacillus, and a specific radiological picture. *Aspergillus fumigatus* was identified in four of the cases and an aspergillaceous species in three, while in the remaining two there was a strong presumption in favour of infection by an *Aspergillus*. Treatment by segmentary exeresis would appear to be indicated.

244. Körtge (P.). **Aspergillose der Säuglinglunge.** [Aspergillosis of the infantile lung.]—*Dtsch. med. J.*, 3, 9–10, pp. 202–204, 1952.

A fatal case of aspergillosis (*Aspergillus* sp.) involving the lungs of a 51-day-old male infant is reported from the Pathological Institute of the Free University, Berlin. Penicillin and sulphonamides were not only useless as remedies but actually promoted fungal growth. Cultures were not obtainable and the diagnosis consequently rests only on a morphological study of the agent.

245. Chortis (P.). **Pulmonary aspergillosis in Greece.**—*Dis. Chest*, 22, 2, pp. 206–212, 8 figs., 1952.

Four cases of pulmonary aspergillosis, from each of which *Aspergillus fumigatus* was cultured, are described from Greece. Three of the patients were cured by the administration of sulphamides and penicillin, but the fourth died before treatment could be started. In all pulmonary infections where tuberculosis is excluded the possibility of aspergillosis should be considered; the clinical pictures of the two diseases are compared. Aspergillosis may exert harmful effects on the myocardium and the neuro-psychic system.

246. Eggert (M. J.) & Barnhart (J. V.). **A case of egg-borne aspergillosis.**—*J. Amer. vet. med. Ass.*, **122**, 912, p. 225, 1953.

Aspergillus fumigatus was readily isolated on Sabouraud's agar from the lungs of four-day-old chicks [1, Nos. 882, 1614] submitted for examination from a hatchery at Richmond, Virginia. This is believed to be the first report of the transmission of aspergillosis through the eggshell during incubation.

247. Trenchi (H.). **La importancia de la sanidad en la explotación de las Aves.** [The importance of health in Poultry raising.]—*Rev. Med. vet., Montevideo*, 26, 50, pp. 1124–1143, 5 figs., 1951. [English summary.]

On p. 1139 of this paper brief notes are given on aspergillosis (*Aspergillus fumigatus*) [see preceding entry] and tinea (*Achorion* [*Trichophyton*] *gallinae*) [1, No. 835] of poultry in Uruguay.

248. Weidlich (N.). **Aspergillusabort und -hautkrankheit bei einem Rinderfötus.** [An *Aspergillus* causing abortion and a skin affection in a bovine foetus.]—*Dtsch. tierärztl. Wschr.*, 59, pp. 279–280, 1952. [*V.B.*, 23, 6, p. 237, 1953.]

Aspergillus fumigatus was isolated from skin lesions and viscera of a five-month bovine foetus.

249. Moore (E. N.). **Aspergillosis in Turkeys.**—Abs. in *Poult. Sci.*, 31, 5, p. 928, 1952.

Besides causing brooder pneumonia, *Aspergillus fumigatus* [cf. 1, No. 689] may be a cause of ophthalmitis in young turkey poults [cf. next entry], two cases of the latter complaint having been reported by Reis from Brazil in chicks reared on sawdust litter and seven outbreaks by Hudson from New Jersey, where bagasse was used. These authors reported involvement of the anterior part of the eye, but histopathological studies in an epizootic among five flocks at the Ohio Agricultural Experiment Station revealed infection of the posterior portion, including the retina and the vitreous humour with adjoining tissues, as well as in the lungs. The birds had been reared on different kinds of litter, with those of one flock confined to a battery.

Aspergillosis may be a serious disease of male breeders, up to 10 to 15 per cent. being infected in some flocks compared with only 2 per cent. of females.

250. Witter (J. F.) & Chute (H. L.). **Aspergillosis in Turkeys.**—*J. Amer. vet. med. Ass.*, **121**, 908, pp. 387–388, 2 figs., 1952.

Heavy mortality of turkey poults from two flocks in Maine (573 deaths out of 800, and 313 out of 1,740 birds) is ascribed to *Aspergillus fumigatus* [cf. preceding entry], which was isolated in pure culture from lung nodules. After lime had been added to the pine sawdust litter of one lot, mortality ceased temporarily. Pine sawdust litter from the same source was the only common factor in both outbreaks and is believed responsible for them.

251. Ainsworth (G. C.). **The incidence of air-borne Cladosporium spores in the London region.**—*J. gen. Microbiol.*, 7, 3–4, pp. 358–361, 2 graphs, 1952.

Petri dish exposures made from August, 1946, to September, 1948, at an altitude of 250 ft. at Sutton, Surrey, and on the roof of the London School of Hygiene and Tropical Medicine showed the incidence of air-borne *Cladosporium herbarum* spores [1, Nos. 1847, 2400], which fluctuated markedly from day to day, to be similar in both localities throughout the year.

252. Studdert (T. C.). **Farmer's lung.**—*Brit. med. J.*, *1953*, 4823, pp. 1305–1309, 2 figs., 1953.

Following a review of the literature on 'farmer's lung' [1, No. 2471 and next

entry] and a brief commentary on the distribution and frequency of the disease, the author reports four cases (three proved and one suspected) from the Cumberland Infirmary, Carlisle. The onset of the complaint is commonly acute, the clinical course is fairly constant, and there is a tendency to spontaneous recovery in six to eight weeks. The symptoms are closely reminiscent of various other troubles associated with the inhalation of fungus-laden dust, and the theory is advanced that 'farmer's lung' is a non-specific interstitial lung reaction to some material in such dust rather than a true fungal infection.

253. Fuller (C. J.). **Farmer's lung : a review of present knowledge.**—*Thorax*, 8, 1, pp. 59–64, 1953.

The clinical picture of 'farmer's' or 'thresher's lung' [see preceding entry] is described from the Royal Devon and Exeter Hospital, with examples of the three phases, namely, (1) the acute isolated attack, (2) the subacute and more chronic condition with a tendency to spontaneous recovery, and (3) the chronic and irreversible stage associated with secondary lung changes, such as emphysema and fibrosis. During the past eight years, 32 cases of the disease (all in males) have been observed in Devonshire, five illustrating phase (1), 24 phase (2), and three phase (3). The complaint is attributed to the inhalation of hay or threshing dust with an excessively high content of mould spores, including those of *Candida albicans*. Repeated exposure to such material ultimately induces a response in the bronchial wall simulating the fungal granuloma developing in rabbits inoculated with *C. albicans*.

254. Lima (A. O.). **Rinite perene e asma brônquica por sensibilização aos esporos de Ustilago tritici (Pers.) Rost.** [Perennial rhinitis and bronchial asthma caused by sensitization by spores of *Ustilago tritici* (Pers.) Rost.]—*Hospital, Rio de J.*, 41, 5, pp. 719–725, 2 figs., 1952.

After five years in a wheat mill in the Federal District of Rio de Janeiro, Brazil, a 41-year-old worker contracted chronic rhinitis and bronchial asthma through sensitization to the chlamydospores of *Ustilago tritici*. Hypersensitization with an extract of the smut enabled the patient to continue his work with complete freedom from respiratory symptoms.

255. Maunsell (Kate). **Air-borne fungal spores before and after raising dust (sampling by sedimentation).**—*Int. Arch. Allergy*, 3, 2, pp. 93–102, 5 figs., 1952.

The appearance of air-borne spores, trapped by sedimentation in open Petri dishes in the atmosphere of rooms after raising dust, was investigated in the homes of eight persons in the London area during the period from November to March. The total number of colonies on plates exposed during and shortly after raising dust exceeded that on plates exposed before this performance by 14 and four times, respectively, the increases being due mainly to increments in the yeast, *Pullularia* [? *pullulans*], *Penicillium* (including *P. spinulosum*), and *Cladosporium herbarum* [2, No. 251] colonies.

The method of sampling by sedimentation is open to the objection that only larger particles fall quickly enough to be collected efficiently. A truer picture of the suspension of small, dry spores in the atmosphere is reflected by the impingement procedure.

256. Reiersøl (Signy). **Om eksposisjon for visse sopparter hos arbeidere utsatt for plantefiberstøv.** [Infection by certain fungi in workers exposed to plant fibre dust.]—*Tidsskr. norske Lægeforen.*, 72, 13–14, pp. 434–437, 1952. [English summary.]

The mycological analysis, at the Institute of Industrial Hygiene, Oslo,

Norway, of samples of sputum from 76 textile operatives and of the dust in their workrooms revealed a significantly higher percentage of infection by *Aspergillus* spp. (including *A. fumigatus*, *A. niger*, *A. terreus*, and *A. oryzae*) among those dealing with hemp than in a control group of 36 laboratory workers. A striking parallelism was demonstrated between the incidence of certain *A.* spp. and liability to 'hemp disease'. Among other fungi represented were species of *Mucor*, *Penicillium*, and *Rhizopus*.

257. Van der Werff (P. J.). **Longaandoeningen veroorzaakt door schimmels.** [Pulmonary affections caused by moulds.]—*Ned. Tijdschr. Geneesk.*, 95, 23, pp. 1682–1690, 1 pl., 1 fig., 1951. [French, German, and English summaries.]

From the Clinic for Allergic Diseases, Amsterdam, the author reports two cases of chronic local pulmonary infection in male patients, aged 57 and 42, whose trouble was aggravated by contamination with moulds, including a new species of *Trichosporon*, *Aspergillus fumigatus*, *A. clavatus*, and *Coniothyrium* sp. Good results were secured by the administration of potassium iodide, creosote, and more especially neo-salvarsan.

258. Fink (J. C.), Vanderploeg (D. E.), & Moursund (M. P.). **'Stilbamidine' in the treatment of cutaneous blastomycosis. Report of a case.**—*J. Amer. med. Ass.*, 151, 16, pp. 1395–1397, 4 figs., 1953.

Stilbamidine was used in the treatment of a 41-year-old patient suffering from cutaneous blastomycosis (*Blastomyces dermatitidis*) at the Brooke Army Hospital, Fort Sam Houston, Texas. An estimated 50 to 60 per cent. involution of the lesions followed the first course of 1·8 gm. After a rest period of 44 days a second course of 1·95 gm. was given and the process of involution was completed. Three months later there were no signs of recurrence, and a mild trigeminal neuropathy, apparently resulting from the treatment, was not considered sufficiently serious for a contra-indication to the use of this promising method of treatment.

259. Pariser (H.), Levy (E. D. P.), & Rawson (A. J.). **Treatment of blastomycosis with stilbamidine. Report of a case.**—*J. Amer. med. Ass.*, 152, 2, pp. 129–130, 2 figs., 1953.

The daily intravenous administration of stilbamidine for 29 days to a 53-year-old male negro patient at the Norfolk (Virginia) General Hospital resulted in the complete disappearance of all cutaneous lesions and systemic symptoms of blastomycosis (*Blastomyces dermatitidis*) [cf. 2, Nos. 50, 258], which had proved refractory to the standard methods of therapy applied during the previous four years. There was no recurrence of the trouble during a follow-up period of 13 months.

260. Schwarz (J.) & Adriano (S.). **Failure of stilbamidine to arrest experimental blastomycosis in Mice.**—*J. invest. Derm.*, 20, 5, pp. 329–330, 1953.

In the authors' experiments at Cincinnati, Ohio, 2 mg. stilbamidine per kg. body weight, administered in a single daily subcutaneous injection, failed to inhibit the development of lethal pulmonary blastomycosis (*Blastomyces dermatitidis*) in mice [2, No. 259].

261. Miller (J. M.), Schoenbach (E. B.), Long (P. H.), Shuttleworth (J. S.), & Snider (G. E.). **Treatment of infections due to Cryptococcus neoformans with stilbamidine.**—*Antibiotics*, 2, 9, pp. 444–446, 1952.

The clinical course of infection by *Cryptococcus neoformans* was not affected by the intravenous administration of stilbamidine [2, No. 260] in three cases at hospitals in New York, Maryland, and Virginia, respectively.

262. Hopkins (J. E T.) & Murphy (J. D.). **Pulmonary resection and undecylenic acid in systemic blastomycosis.**—*J. thorac. Surg.*, 26, 4, pp. 409–418, 5 figs., 1952.

Two cases of systemic pulmonary blastomycosis (*Blastomyces dermatitidis*), localized in one lung, are reported from the Veterans Administration Hospital, Oteen, North Carolina. Pneumonectomy was performed on both patients (the diagnosis in the second case being made subsequent to the operation); the first (a 34-year-old negro) died six months later but the second (aged 40) responded favourably to the oral administration of undecylenic acid at a dosage of 10·5 gm. daily for four months. This is believed to be the first record of the application of a fatty acid to the therapy of a deep mycosis, against which potassium iodide proved unavailing.

263. Jayaram (S. S.), Sirsi (M.), Ahmed (V. N.), & Dayalu (T. K.). **Blastomycosis of lungs.**—*J. Indian med. Ass.*, 21, 8, pp. 365–367, 1 fig., 1952.

A fatal case of pulmonary infection, tentatively attributed to *Blastomyces* [*dermatitidis*], in a 42-year-old male is reported from Bangalore, South India.

264. Schwarz (J.) & Baum (G. L.). **North American blastomycosis (geographic distribution, pathology and pathogenesis).**—*Docum. Med. geogr. trop.* (formerly *Docum. neerl. indones. Morb. trop.*), 5, 1, pp. 29–41, 12 figs., 1953.

A brief introduction to the mycology and pathology of blastomycosis (*Blastomyces dermatitidis*), based on information acquired at the Jewish and General Hospital, Cincinnati, Ohio, is followed by summaries of three case histories and a discussion of the pathogenesis of the disease, the restriction of which to the North American continent is emphasized. Its pulmonary origin is postulated essentially on the basis of lung findings and the absence of a primary complex in 'skin cases'. The similarity of the pathological changes in blastomycosis to those of other granulomatous diseases, especially tuberculosis, histoplasmosis [*Histoplasma capsulatum*], and coccidioidomycosis [*Coccidioides immitis*], is illustrated.

265. Tompkins (V.) & Schleifstein (J.). **Small forms of Blastomyces dermatitidis in human tissues.**—*Arch. Path.*, 55, 5, pp. 432–435, 3 figs., 1953.

A case of tuberculosis in a 69-year-old man, complicated by septicaemia with *Blastomyces dermatitidis*, is reported from a New York hospital. Small forms of the fungus, resembling those of *Histoplasma capsulatum*, were conspicuous in sections of the lungs. Minute study revealed characteristic budding in these forms and all gradations in size up to the usual dimensions. Blood clots cultured on Sabouraud's and blood agar gave rise exclusively to normal-sized forms, which also developed in hamsters inoculated with exudate and cultures from the patient. The small size of the budding forms would appear to be a function of host resistance rather than a strain peculiarity.

266. Wegmann (T.). **Blastomykose und andere Pilzerkrankungen der Lunge.** [Blastomycosis and other fungal diseases of the lung.]—*Dtsch. Arch. klin. Med.*, 199, 2, pp. 192–205, 1952.

From the Medical Polyclinic of the University of Zürich, Switzerland, a case of localized pulmonary blastomycosis (*Blastomyces dermatitidis*) in a 50-year-old female worker in a tobacco factory is fully reported. Information is briefly presented on a number of other fungal diseases of the lungs, together with a brief description of a case of meningo-encephalitis caused by *Cryptococcus neoformans*.

267. Hall (R. H.) & Mendeloff (J.). **Blastomycotic osteomyelitis. With a case report.**—*J. Bone Jt Surg.*, 34-a, 4, pp. 977–980, 4 figs., 1952.

A case of blastomycotic osteomyelitis involving the foot and caused by *Blastomyces dermatitidis* is described from the Veterans Administration Hospital, Fayetteville, Arkansas. Treatment was by application of casts, iodide therapy, X-rays, and general supportive therapy, no one method alone being satisfactory. Prognosis in cases of *B. dermatitidis* depends on the extent of dissemination of the disease, patients with only localized infections living for many years. Surgery should be conservative. The close kinship between the pathogenesis, differential diagnosis, and treatment of this disease and of tuberculous osteomyelitis is emphasized.

268. Evans (E. E.). **Cryptococcosis (torulosis) : a review of recent cases.**—*Univ. Mich. med. Bull.*, 18, 2, pp. 43–63, 1 fig., 1952.

A bibliography of 93 titles forms the basis of this tabulated survey of 101 recent cases of cryptococcosis (*Cryptococcus neoformans*), of which a total of some 221 are on record. The subject is discussed under the headings of geographical distribution, age, sex, and race incidence, source of infection and portal of entry, clinical considerations, differential diagnosis, microbiology, immunology, and therapy.

269. Carton (C. A.) & Liebig (Charlotte S.). **Treatment of central nervous system cryptococcosis. Laboratory studies.**—*Arch. intern. Med.*, 91, 6, pp. 773–783, 2 graphs, 1953.

Of 29 agents tested at the College of Physicians and Surgeons, Columbia University, New York, for their efficiency against a standard strain of *Cryptococcus neoformans*, actidione [1, No. 2413], polymyxin B, U-0579, rimocidin [1, No. 2218], thiolutin, compound 77, and P. 968 were inhibitory at concentrations of 5 per ml. or less. The action of actidione was fungistatic and that of the other compounds fungicidal. Of various dual combinations tested, the most potent were actidione with polymyxin B and actidione with compound 77, both of which exerted a synergistic effect *in vitro*.

Strains of the fungus isolated from mice treated with actidione and polymyxin B, and from a human case subjected to intensive actidione therapy, did not develop resistance to the drugs. In preliminary experiments on mice a direct correlation was established between the size of the inoculum and the average days of survival. The apparent lack of prophylactic and therapeutic effects of actidione and polymyxin B injections is attributed in part to the overwhelming infection induced by massive inoculation with a highly virulent strain of *C. neoformans*.

270. De Ledesma (J. P. R.) & Alguacil (D. C. G.). **Torula histolítica cerebral.** [Cerebral *Torula histolytica*.]—*Rev. clín. esp.*, 46, 2, pp. 106–108, 1952.

A case is reported of cerebral tumour due to *Torula histolytica* [*Cryptococcus neoformans*] in a 25-year-old quarryman of Plasencia, Spain.

271. Johnson (C. W.), Joyner (J. W.), & Perry (R. P.). **The inhibitory effect of four thiosemicarbazones on Cryptococcus neoformans.**—*Antibiotics*, 2, 12, pp. 636–638, 1952.

Four thiosemicarbazones, tibione (4-acetylaminobenzal thiosemicarbazone), myvizone (p-formylacetanilide thiosemicarbazone), vanithiazone, and bromothiazone (thiocarbazones of substituted vanillins) were tested for their activity against *Cryptococcus neoformans in vitro*. All exerted some inhibitory effect but bromothiazone was the most active, causing complete cessation of growth at a concentration of 50 mg. per ml.

272. Marshall (T. M.). **Torular meningo-encephalitis.**—*J. Kentucky med. Ass.*, 50, 7, pp. 292–297, 1952.

Two cases of torular meningo-encephalitis (*Cryptococcus neoformans*) are reported from Louisville, Kentucky, one patient treated with penicillin being still alive, though mentally deranged, a year after the cessation of treatment. Descriptions of the symptoms and of clinical and laboratory findings are combined with recommendations for the diagnosis of the disease and in particular for its distinction from tubercular meningitis. Laboratory methods suggested include examination of the cerebro-spinal fluid unstained, in Indian ink, and stained with Wright's or Giemsa's reagents, and of cultures on Sabouraud's blood agar and Loeffler's medium. Peculiarities in the cerebro-spinal fluid in cases of torulosis are also described, together with the fairly characteristic lesions. Hyperthermia is suggested as a possible mode of treatment.

273. Holmes (S. J.) & Hawks (G. H.). **Torulosis of the central nervous system.**—*Canad. med. Ass. J.*, 68, 2, pp. 143–146, 3 figs., 1953.

A fatal case of torulosis (*Cryptococcus neoformans*) of the central nervous system in a 42-year-old farmer, believed to be the first authentic record for Canada, is reported from the Department of Bacteriology and the Division of Neuropathology, University of Toronto. A diagnosis of Hodgkin's disease, with apparent cure by radiotherapy, had been made seven years earlier.

274. Rigdon (R. H.) & Kirksey (O. T.). **Mycotic aneurysm (cryptococcosis) of the abdominal aorta.**—*Amer. J. Surg.*, 84, 4, pp. 486–491, 4 figs., 1952.

A case of mycotic aneurysm of the abdominal aorta secondary to a cryptococcus (torulosis) [*Cryptococcus neoformans*] infection is described from Texas. The infection appeared to have arisen in the vertebrae and spread to the adjacent tissues. No lesion of the lungs or skin could be found which might have served as a portal of entry for the fungus.

275. Negroni (P.) & Lanata (C. A.). **Estudios sobre el Cryptococcus neoformans. III. La formación capsular.** [Studies on *Cryptococcus neoformans*. III. Capsular formation.]—*An. Soc. cient. argent.*, 153, 5, pp. 200–211, 3 figs., 1952. [English summary.]

In further studies on *Cryptococcus neoformans* at the Malbrán Bacteriological Institute, Buenos Aires, Argentina [1, No. 2114], the influence of various carbon and nitrogen sources on capsule formation was investigated on Lodder's auxanographic media. The process was favoured by mannose, mannitol, trehalose, and dextrin in the presence of ammonium sulphate at 5 per mille and by peptone in that of 1 per cent. dextrose. No appreciable reduction of the capsule was observed in cells treated with amylases, hyaluromilase, and solutions of 10/N sodium hydroxide or 0·5/N mercuric chloride.

No precipitins or agglutinins were formed in rabbits injected with cells of the fungus, whether living, dead, mechanically ruptured, or treated by various methods, or with the protein fraction.

276. Emmons (C. W.). **Cryptococcus neoformans strains from a severe outbreak of bovine mastitis.**—*Mycopathologia*, 6, 3, pp. 231–234, 1952.

Sixty-two strains of *Cryptococcus neoformans* isolated from a severe outbreak of bovine mastitis in the United States were compared with the same species from cases of human cryptococcosis, material from soil, and the original Sanfelice strain, and found to be typical of the species. The strains, varied among themselves in colour, acid production, and amount of capsular material. In the course of the study ten mucoid mutants were noted.

277. Takos (M. J.) & Elton (N. W.). **Spontaneous cryptococcosis of Marmoset Monkeys in Panama.**—*Arch. Path.*, 55, 5, pp. 403–407, 2 figs., 1953.

Spontaneous infection with *Cryptococcus neoformans* in a male and a female marmoset monkey (*Leontocebus geoffroyi*) is reported from Ancon, Isthmus of Panama, where the fungus had not previously been observed. This is the third record of cryptococcosis in a lower animal, the two previous relevant contributions to the literature concerning a horse (*J. med. Res.*, 9, p. 31, 1902) and a cheetah, *Cynaelurus jubatus* (*Arch. Path.*, 18, p. 362, 1934).

278. Barros Saint-Pasteur (J.). **Estudio general de la paracoccidioidosis brasiliensis. Su importancia en odontología. (Acerca de una primera comunicación sobre paradentosis paracoccidioidica).** [General study of Brazilian paracoccidioidosis. Its importance in odontology.]—*Bol. Lab. Clín. Razzetti*, 16, 37–38, pp. 493–525, 2 figs., 1952.

The literature on South American blastomycosis (*Paracoccidioides brasiliensis*) is reviewed and the history of the disease summarized, with special reference to Venezuela, where it was first reported in 1937 and is now recognized as a cause of paradentosis (alveolar pyorrhoea).

279. Benaím Pinto (H.). **Contribución al estudio de la paracoccidioidosis brasiliensis en Venezuela. Notas clínicas y terapéuticas, con presentación de 7 casos.** [Contribution to the study of Brazilian paracoccidioidosis in Venezuela. Clinical and therapeutic notes with presentation of seven cases]—*Arch. venez. Pat. trop.* 2, 1, pp. 183–222, 30 figs., 1950. [English summary.] [*T.D.B.*, 50, p. 247.]

Mucous lesions were present in all the seven cases of South American blastomycosis (*Paracoccidioides brasiliensis*) described in detail from Venezuela [2, No. 278], affecting chiefly the inner aspect of the lips, the gums, buccal mucosa, tongue, soft palate, and tonsils, and, in one patient, also the pharynx, larynx, and nares. Ulceration of the small and large intestines was not uncommon and in one case the ano-rectal mucosa was involved, with extension on to the perineal skin. In three other patients the skin of the face was involved by extension of disease from the mouth. The resulting lesions were shallow, almost painless ulcerations on a granulomatous infiltration of the skin. Lesions of this kind, healing by scar-formation, may cause marked deformity of the mouth and difficulty in feeding.

Pulmonary lesions, shown by radiography, were present in all cases and ranged from extensive bilateral infiltrations to isolated small nodules; they were situated principally in the lower lung fields. Dyspnoea and cough, sometimes with blood-streaked sputum, were not infrequent but *P. brasiliensis* was only occasionally found in the sputum. At a more advanced stage, local fibrosis, calcification, and emphysema were observed.

Lymphadenopathy, regional or general, affecting chiefly the submaxillary and cervical groups, was not uncommon, and in one case there was massive involvement of the mesenteric nodes with predominantly abdominal symptoms.

In the series of seven cases, the mycological diagnosis was based most frequently on the identification, by microscopy, of *P. brasiliensis* in smears or sections from biopsy specimens, or in pus, but only once in sputum and never in bone marrow. The fungus was isolated in culture from one patient.

In treatment, marked clinical improvement, in one instance amounting to apparent cure, resulted from administration of sulphathiazole, sulphadiazine or both, in doses of 3 to 6 gm. daily over long periods. Antibiotics had no observed therapeutic effect.

280. Bogliolo (L.). **About the morphology and mode of reproduction of Aleurisma brasiliensis Areoira Neves and Bogliolo, 1950, in human tissues.**—*Rev. Asoc. méd. Minas Gerais*, 1, 3, pp. 253–256, 1950.

Exception is taken to the interpretations placed by Mackinnon *et al.* [1, No. 1351] on various statements in the author's contributions to the literature on *Aleurisma* [*Paracoccidioides*] *brasiliensis* [1, No. 2259], the study of which necessitates the use of the silver impregnation technique [1, No. 1128].

281. Kletter (G.), Winckel (W. E. F.), & Collier (W. A.). **Contributions to the geographical pathology of Surinam. II. A case of South American blastomycosis in Surinam.**—*Docum. Med. geogr. trop.* (formerly *Docum. neerl. indones. Morb. trop.*), 5, 1, pp. 25–28, 5 figs., 1953.

A case of South American blastomycosis (*Blastomyces* [*Paracoccidioides*] *brasiliensis*), localized in the skin of the face of a 50-year-old negro woodcutter, is reported from Surinam. Some of the parasites revealed by histopathological examination and inoculation experiments on guinea-pigs contained a doubly-refracting, crystalline body.

282. Machado (J.) & De Carvalho (Maria da C. M.). **Considerações em tôrno das localizações pulmonares da paracoccidioidose brasiliera.** [Considerations regarding the pulmonary localizations of Brazilian paracoccidioidosis.]—*Rev. brasil. Tuberc.*, 20, 143, pp. 503–536, 11 figs., 1952.

Cortisone gave encouraging results in a small series of cases of pulmonary infection by *Paracoccidioides brasiliensis* in hospital patients in Rio de Janeiro, Brazil, causing disappearance of the granulomata and stimulating the proliferation of the epithelial cells and of collagenic tissue.

283. Furtado (T. A.). **Comprometimento pulmonar na blastomicose Sul-americana.** [Pulmonary involvement in South American blastomycosis.]—*Rev. Asoc. méd. Minas Gerais*, 3, 1–2, pp. 49–57, 6 figs., 1952. [English summary.]

Of 20 cases of South American blastomycosis (*Paracoccidioides brasiliensis*) encountered in the State of Minas Gerais, Brazil, from 1944 to 1950, 18 (90 per cent.) involved the lungs. Pulmonary lesions may develop at any stage of the disease and be associated with its various clinical forms, while the radiological changes encountered were also widely divergent. The diagnosis of pulmonary blastomycosis should be based on radiological examination in conjunction with other manifestations of the disease (mucous, ganglionic, cutaneous, and so forth), while the favourable response to sulpha therapy is a helpful adjunct to its recognition.

284. Van Uden (N.). **Zur Kenntnis von Torulopsis pintolopesii sp. nov. Mit Beobachtungen über die parasitäre Phase von Acladium castellanii Pinoy.** [Contribution to the knowledge of *Torulopsis pintolopesii* n.sp. With observations on the parasitic phase of *Acladium castellanii* Pinoy.]—*Arch. Mikrobiol.*, 17, 2, pp. 199–208, 1 fig., 1952.

In the course of three weeks six out of ten white mice inoculated intraperitoneally at the Botanical Institute, Lisbon, with *Acladium castellanii* developed abscesses in the liver, spleen, and small intestine. The livers and spleens of three of the animals yielded a hitherto unknown yeast, herein designated *Torulopsis pintolopesii* n.sp., which produces singly or in pairs oval or round cells, 5 to 7 by 4 to 5 μ, and develops exclusively at a temperature range of 28° to 40° C. and in the presence of a growth substance residing in yeast and meat extract but not in peptone. The fungus ferments and assimilates glucose and peptone but none of the other sources of carbon and nitrogen tested. Streak

cultures after a month at 35° on agar enriched with glucose, peptone, and yeast extract are cream-coloured, soft, glistening, and smooth, the margin being often slightly crinkled.

285. Morquer (R.), Puget (E.), & Bazex (A.). **Sur un nouvel agent de blastomycose chez le Chien.**—[On a new agent of blastomycosis in the Dog.]—*C.R. Acad. Sci., Paris*, 236, 5, pp. 546–548, 1953.

Candida pseudotumoralis n.sp. is the name assigned to a yeast responsible for a case of canine pseudotumoral blastomycosis in Paris. Infection apparently originated in an interdigital injury and became generalized by means of metastases. On malt agar the organism formed ovoid to spherical elements, 5·8 to 8·2 or up to 9 by 4·2 to 7·2 μ, and on macerated potato filtrate a pseudomycelium with simple fertile axes, budding in regular verticils of blastospores of the *Mycotorula* type and forming chlamydospores. Glucose, saccharose, maltose, and galactose were assimilated.

286. French (A. J.) & Russell (S. R.). **Chromoblastomycosis. Report of first case recognized in Michigan, apparently contracted in South Carolina.**—*Arch. Derm. Syph., Chicago*, 67, 2, pp. 129–134, 4 figs., 1953.

The first case of chromoblastomycosis recognized in Michigan is reported and discussed with reference to the pertinent literature. The patient, a 74-year-old male, had sustained an injury to the left wrist from a sliver of wood while on a visit to South Carolina. No culture was obtained from the lesion (which was excised without recurrence), but the gross and microscopic characters were typical of the serologically and morphologically indistinguishable *Phialophora verrucosa*, *Hormodendrum* [*P.*] *pedrosoi*, and *H. compactum* [*P. compacta*].

287. Vanbreuseghem (R.) & Wanson (M.). **Echinococcose primitive intra-épidermique et chromoblastomycose en lésions associées.** [Primary intra-epidermal echinococcosis and chromoblastomycosis in associated lesions.]—*Ann. Soc. belge Méd. trop.*, 32, 6, pp. 679–682, 1 pl., 1 fig., 1952. [Flemish summary.]

An isolated lesion in the foot of a female native in the Belgian Congo showed the presence of *Echinococcus granulosus* and *Phialophora pedrosoi* [1, No. 2422]. The authors consider that the association of the two organisms was probably fortuitous and that the intra-epidermal localization of the cyst was rendered possible by the epidermal acanthosis induced by *P. pedrosoi*.

288. Farina (R.). **Dermatite verrucosa cromo-parasitária (phialophoromycose); tratamento cirúrgico.** [Chromoparasitic verrucose dermatitis (phialophoromycosis): surgical treatment.]—*Hospital, Rio de J.*, 42, 2, pp. 231–238, 5 figs., 1952. [English summary.]

The author presents five cases of chromoparasitic verrucose dermatitis (phialophoromycosis) [*Phialophora* spp.; cf. 1, No. 1372] of the lower limbs in Brazil, treated surgically by removal of the lesions as far as the aponeurotic plane and the application of a free skin graft to cover this plane. In the case of a relapse joint treatment with iodates should be carried out together with further surgical treatment. A brief study is made of the etiopathogenicity, synonymy, localization, symptomatology, diagnosis, and prognosis of the disease. A diagnosis should be made not from a dermatological chart alone but from a direct search for the parasite between the lamina and laminula in the matter withdrawn from the lesions, by culturing the fungus, and finally by histopathological examination when other methods are unsuccessful.

289. Schwarz (J.) & Muth (J.). **Coccidiomycosis : a review.**—*Amer. J. med. Sci.*, 221, 1, pp. 89–107, 1951.

In their extensive review of coccidioidomycosis (*Coccidioides immitis*) the authors trace the history of the disease, emphasize the considerable risk of infection of laboratory workers [2, No. 65], and discuss such subjects as the biology of the fungus, methods of identification, epidemiology, geographical distribution, and diagnosis of the disease, and point out that no specific treatment is at present available. There are nearly 300 references to the literature.

290. Tarbet (J. E.) & Breslau (A. M.). **Histochemical investigation of the spherule of Coccidioides immitis in relation to host reaction.**—*J. infect. Dis.*, 92, 2, pp. 183–190, 1 fig., 1953.

At the Department of Medicine, University of California Medical Center, Los Angeles, no stage of dormancy in the parasitic cycle of *Coccidioides immitis* [2, No. 64] was demonstrable by the application of the Korson stain for nucleic acids (*Stain Tech.*, 26, pp. 265–270, 1952), all the spherules being apparently in an active state of metabolism. There are evidently no living spores of the fungus that exert their influence on the host in the sole capacity of foreign bodies.

The presence in the large spherule walls of considerable amounts of phospholipid, revealed by the Baker stain (*Quart. J. micr. Sci.*, 87, pp. 441–470, 1946; 88, pp. 463–465, 1947), and its absence in the small fungus cells suggest that divergent permeabilities in the two spherule types may account for the differential histopathologic reaction to them. Lison's α-toluidin blue reaction (cited by D. Glick in 'Techniques of histo- and cytochemistry', New York, 1949) indicated that the sporangiospores differ from all other spherules of *C. immitis* in the possession of a relatively thick outer layer rich in mucopolysaccharide. Treatment with Schweitzer's cellulose-destroying reagent did not modify the appearance of the fungus wall when stained with safranin-green, but its affinities were markedly changed by the application of sodium hypochlorite, which dissolved chitin and revealed a basophilic matrix.

291. Bogliolo (L.) & Neves (J. A.). **Researches on the etiological agents of the American blastomycosis. II. Morphology and systematic of the agent of Posadas-Wernicke's disease.**—*Mycopathologia*, 6, 3, pp. 137–160, 7 pl., 19 figs., 1952.

In continuation of their studies [1, No. 2259] the authors, working at the University of Minas Gerais, Brazil, give an account of their detailed examination of the saprophytic phase of ten isolates of *Coccidioides immitis* on a poor medium (maize meal agar) which convinced them that the fungus should be transferred to the genus *Aleurisma*. They find that on such a medium *C. immitis* and other parasitic fungi produce fructifications which are entirely characteristic and quite constant and can therefore be used in systematic determinations. The various types of thallospores and conidia are defined, and it is shown that aleuria, formed in the same way as in the genera *Trichophyton* and *Microsporum*, are absolutely predominant over other forms of fructification in *C. immitis*, whereas arthrospores, as found in *Geotrichum*, *Trichosporum*, and *Oidiodendrum*, have never been seen. For these reasons, and because the aleuria of *C. immitis* differ both from those of *Paracoccidioides brasiliensis* and *Blastomyces dermatitidis* and from those of the genera *Trichophyton* and *Microsporum*, it is proposed to reclassify the fungus as *Aleurisma immitis*. An annotated list of 28 synonyms or possible synonyms is appended.

292. Goodman (J. R.), Fountaine (Joan), & Vincent (J.). **Cooling of embryonated eggs to produce an LD_{50} for Coccidioides immitis.**—*Proc. Soc. exp. Biol., N.Y.*, 83, 2, pp. 360–362, 1953.

At the Department of Investigative Medicine, Veterans Administration Hospital, Long Beach, California, the cooling of embryonated hen's eggs for 24 hours on the ninth day of incubation increased the virulence of *Coccidioides immitis* in such a way as to produce an LD_{50} at a dosage of 3,500 spores.

293. Joress (M. H.) & Bushueff (B. P.). **Pulmonary coccidioidomycosis. Clinical and roentgenological observations in residual lesions.**—*Dis. Chest*, 22, 1, pp. 55–67, 10 figs., 1952. [Spanish and French summaries.]

Because of the exposure of large numbers of ex-service personnel to infection by *Coccidioides immitis* in the endemic south-west of the United States during the recent war years, residuals harbouring the fungus are now encountered in all parts of the country. Although most of these persons are in good health, a certain proportion have already experienced pathological reactivation and others are expected to do so at any time. Six cases are presented from the Veterans Administration Hospital, West Roxbury, Massachusetts, illustrating the problem of coccidioidal cavity necrosis and haemorrhage and the operative treatment by means of lobectomy of patients with intractable haemorrhage. The disseminated form of coccidioidal residual reactivation is regarded as an ever-present danger which may prove fatal.

294. Cohen (R.), Bos (J.), & Webb (P. A.). **Co-existing coccidioidomycosis and tuberculosis in children ; report of three cases.**—*Arch. Pediat.*, 69, 6, pp. 267–272, 3 figs., 1952.

Three cases of co-existing coccidioidomycosis (*Coccidioides immitis*) and tuberculosis in children are described from Bakersfield, California. A six-year-old Mexican suffering from primary pulmonary infections of both diseases was cured with streptomycin and bed rest. A three-year-old Mexican with disseminated coccidioidomycosis and primary pulmonary tuberculosis died after treatment with stilbamidine, which caused fatty infiltration of the brain and kidney and yellow atrophy of the liver. A nine-year-old coloured child was cured of primary pulmonary infections with both diseases.

295. Stein (H. F.). **Coexisting pulmonary coccidioidomycosis and tuberculosis.**—*Amer. Rev. Tuberc.*, 67, 4, pp. 477–489, 6 figs., 1953. [Spanish and French summaries.]

Six out of 15 cases of co-existing pulmonary coccidioidomycosis (*Coccidioides immitis*) and tuberculosis observed at the Veterans Administration Hospital, Tucson, Arizona, are reported in detail. The fungal infection does not appear to predispose to tuberculosis, nor is the latter exceptionally severe in cases of a combined attack. Treatment is directed exclusively towards the tuberculosis. Pulmonary resection is indicated in a high percentage of cases because of the poor response of coccidioidal cavities to collapse therapy. Patients known to harbour *C. immitis* should be observed for lengthy periods for evidence of concomitant tuberculosis.

296. Tager (M.). **The effect of isoniazid and iproniazid on Coccidioides immitis.**—*Amer. Rev. Tuberc.*, 67, 4, p. 538, 1953.

At the Emory University School of Medicine, Atlanta, Georgia, isoniazid inhibited the growth of *Coccidioides immitis* on Sabouraud's broth at a concentration of 1,000 γ per ml., but iproniazid failed to do so and neither compound protected 20-gm. female Swiss mice against the results of intraperitoneal inoculation with 1,000,000 infectious units of the fungus.

297. Dykes (J.), Segesman (J. K.), & Birsner (J. W.). **Coccidiomycosis of bone in children.**—*Amer. J. Dis. Child.*, 85, 1, pp. 34–42, 7 figs., 1953.

From the records of the Kern General Hospital, Bakersfield, California, 26 cases of osseous coccidioidomycosis (*Coccidioides immitis*) in children are presented, three of which are described in detail. The lesion or lesions are osteolytic and the process is chronic, with a relatively hopeful prognosis. It is frequently preceded by parenchymal infiltration of the lung.

298. Karrer (H. E.). **Virulence of Coccidioides immitis determined by intracerebral inoculation.**—*Proc. Soc. exp. Biol., N.Y.*, 82, 4, pp. 766–768, 1953.

At the Duke University School of Medicine, Durham, North Carolina, the virulence of two strains of *Coccidioides immitis* was evaluated by intracerebral inoculation in albino mice [cf. 1, No. 1915]. The LD_{50} for one was estimated to lie between 1 and 6 and that of the other between 1 and 9 fungus particles.

299. Chapnick (H. A.). **Disseminated coccidioidomycosis.**—*J. Mich. med. Soc.*, 51, 7, pp. 833–836, 1952.

Three cases of disseminated coccidioidomycosis (*Coccidioides immitis*) are described from the United States, showing the great variation in the clinical symptoms of the disease. Eosinophilia of the spinal fluid is suggested as a possible diagnostic aid for meningeal granulomatous coccidioidomycosis. Stress is laid on the importance of distinguishing the disease from lymphoblastosis, tuberculosis, and brain tumour, which it may simulate. The terms 'primary' and 'disseminated' coccidioidomycosis are differentiated and it is suggested that the designation 'granulomatous' be applied only to specific clinical manifestations.

300. Cohen (R.) & Webb (Patricia A.). **Nystatin R—a coccidioidocidal antibiotic.**—*Arch. Pediat.*, 69, 10, pp. 414–416, 1 fig., 1952.

At the Kern General Hospital, Bakersfield, California, the authors corroborated the successful results obtained by Hazen and Brown in *in vitro* tests on the inhibition of *Coccidioides immitis* with nystatin R (fungicidin) [2, No. 192] at 7·5 microgm. per ml., using propylene glycol as a solvent. The latter is itself fungicidal to *C. immitis* but at too high a concentration to be used alone.

301. Mackinnon (J. E.) & Honorato-Chaparro (A.). **Resultados de una encuesta sobre sensibilización a la coccidioidina y a la histoplasmina en Viña del Mar.** [Results of an inquiry on sensitivity to coccidioidin and histoplasmin in Viña del Mar.]—*Hospital, Viña del Mar*, 7, pp. 25–30, 1951. [Abs. in *An. Inst. Hig. Montevideo*, 4, p. 92, 1950 (issued 1951). English summary.]

Simultaneous coccidioidin and histoplasmin tests were performed in Viña del Mar, Chile, on 400 schoolboys 6 to 16 years old. There were only two reactors to histoplasmin and none to coccidioidin [cf. 1, No. 1349].

302. Slim Villegas (V. J.) & Aranda Reyes (B.). **Coccidioidosis e histoplasmosis en el Valle de Mexicali, Mexico.** [Coccidioidosis and histoplasmosis in the Mexicali Valley, Mexico.]—*Bol. Ofic. sanit. pan-amer.*, 34, 2, pp. 137–142, 1953.

In 1950 the authors performed 6,141 histoplasmin and 6,704 coccidioidin sensitivity tests on inhabitants of the urban and rural districts of the Mexicali Valley, Mexico. Positive reactors to histoplasmin numbered 1,293 (21·5 per cent.) and to coccidioidin 1,318 (21·1), the two sexes being about equally represented. Only above the age of 15 years were the indices considered to be significant. It is concluded from the results of these studies that the Mexicali Valley is an endemic zone of coccidioidomycosis [*Coccidioides immitis*] and histoplasmosis [*Histoplasma capsulatum*] (which occur in a mild form), as well as of tuberculosis.

303. Cozad (G. C.) & Furcolow (M. L.). **Laboratory studies of Histoplasma capsulatum. II. Size of the spores.**—*J. infect. Dis.*, 92, 1, pp. 77–84, 4 graphs, 1953.

The data relating to size distribution and proportion of tuberculated and non-tuberculated spores (totalling 7,000) in 14 strains of *Histoplasma capsulatum* grown for one and five months on potato dextrose agar are presented and discussed. In the one-month-old series 85 and in the five-month 73 per cent. of the spores were less than 4·6 μ in diameter, while only 4 per cent. of the former and 10·7 of the latter were of the large, tuberculated type (9·6 μ and upwards) [2, No. 77]. There was no uniform relationship between the size distribution of spores of strains isolated recently or up to ten years ago. The spore sizes observed in these studies would be compatible with the air-borne route of infection in histoplasmosis.

304. Grayston (J. T.) & Furcolow (M. L.). **The occurrence of histoplasmosis in epidemics—epidemiological studies.**—*Amer. J. publ. Hlth*, 43, 6, pp. 665–676, 1 fig., 1 map, 1953.

The epidemiological features of 13 outbreaks of histoplasmosis (*Histoplasma capsulatum*) in the United States are described and the common source nature of each is established. From a consideration of the activities at the point source and the clinical course of the illnesses it is concluded that infection was caused by the inhalation of air-borne organisms. The presence of the fungus in the soil material at the point sources of most of the epidemics was demonstrated [1, Nos. 2451, 2452]. Environmental studies failed to reveal any consistent factors at all the common sources of infection.

305. Rallo (A.). **Nosografia ed epidemiologia dell' istoplasmosi.** [Nosography and epidemiology of histoplasmosis.]—*Rif. med.*, 66, 28, p. 775, 1952.

Up-to-date information on the diagnosis of histoplasmosis (*Histoplasma capsulatum*) by histoplasmin tests and radiography and on the epidemiology of the disease is concisely summarized.

306. Caravaglios (F.). **L'importanza dell' istoplasmosi.** [The importance of histoplasmosis.]—*Rass. int. Clin. Terap.*, 32, 17–18, pp. 556–557, 1952.

This brief review of some important contributions to the literature on histoplasmosis (*Histoplasma capsulatum*) includes references to two reports of combined histoplasmin and tuberculin sensitivity in patients at a sanatorium in central Italy (*G. clin. Med.*, 28, p. 399, 1947; *G. ital. Tuberc.*, 2, p. 211, 1948).

307. Inglis (J. A.) & Powell (R. E.). **Histoplasmosis : a review, with report of a fatal Australian case.**—*Med. J. Aust.*, 40 (i), 5, pp. 138–141, 4 figs., 1953.

The second case of histoplasmosis (*Histoplasma capsulatum*) in Australia [1, No. 1176 and next entry] is fully reported from Brisbane, Queensland, the patient being a 52-year-old farmer and meat-worker who had never left the country.

308. Dowe (J. B.), Graham (C. S.), Brown (Shirley), & Durie (E. Beatrix). **A case of histoplasmosis.**—*Med. J. Aust.*, 40 (i), 5, pp. 142–144, 3 figs., 1953.

Histoplasma capsulatum was isolated on Sabouraud's agar and blood agar from tissue fluid obtained from the base of an ulcer on the tongue of a 37-year-old patient suffering from loss of voice at the Royal North Shore Hospital, Sydney, New South Wales [cf. preceding entry], who was on military service in Dutch New Guinea, the Schouten group of islands, and Borneo for varying periods between 1943 and 1946 and became subject to 'feverish attacks' from 1944 onwards. Some improvement had been effected at the time of writing by the successive administration of atebrin, mepacrine methonosulphate, and sulphadiazine.

309. Pinkerton (H.) & Iverson (Lalla). **Histoplasmosis ; three fatal cases with disseminated sarcoid-like lesions.**—*Arch. intern. Med.*, 90, 4, pp. 456–467, 7 figs., 1952.

Three fatal cases of histoplasmosis (*Histoplasma capsulatum*) are described from a review of material in the files of the Armed Forces Institute of Pathology, Washington, D.C. Sarcoid-like lesions were present in the lymph nodes, lungs, spleen, liver, and other organs. The cause of death in each case was bilateral mycotic caseation of the adrenal glands. The application of periodic acid-Schiff stains [1, Nos. 2139, 2140] to the caseous material revealed enormous numbers of organisms which could not be identified in sections stained by routine methods.

Although it is not impossible that these cases may represent the concurrence of two diseases, sarcoidosis and histoplasmosis, the evidence strongly suggests that the latter alone is concerned and may occasionally produce the clinico-pathological picture to which the name sarcoidosis has been given.

310. Campbell (Charlotte C.). **Antigenic fractions of Histoplasma capsulatum.**—*Amer. J. publ. Hlth*, 43, 6, pp. 712–717, 1953.

At the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, D.C., two antigenic components of *Histoplasma capsulatum*, both precipitable by ethanol, were found to be important in the serological study of infections caused by the fungus [1, Nos. 1184, 1413, 1414, *et passim*]. A 0·1 mole fraction, the bulk of which was produced by the yeast phase, reacted with sera from early histoplasmosis but also cross-reacted with those from early coccidioidomycosis [*Coccidioides immitis*] and blastomycosis [*Blastomyces dermatitidis*]. The 0·4 mole fraction, mostly produced by the mycelial phase, was incapable of detecting complement-fixation antibody in the initial stages of histoplasmosis but did not react with sera from cases of coccidioidomycosis and blastomycosis.

311. Monroe (J.) & Kurung (J. M.). **Histoplasmosis, with review of the literature and report of a case, proved by culture, with involvement of the upper lobe of each lung simulating active bilateral apical pulmonary tuberculosis.**—*Ann. intern. Med.*, 38, 2, pp. 206–223, 2 figs., 1953.

A case is reported of chronic bilateral upper-lobe pulmonary histoplasmosis (*Histoplasma capsulatum*) of mixed bronchopneumonic and cavitary types in a 56-year-old male patient at the Ray Brook State Tuberculosis Hospital, New York. The fungus was repeatedly cultured from the sputum, but there was no sign of the disease in any other site. This is said to be the first case of proved histoplasmosis in a lifelong resident of New York State.

312. Schultz (D. M.). **Histoplasmosis of the central nervous system.**—*J. Amer. med. Ass.*, 151, 7, pp. 549–551, 3 figs., 1953.

Involvement of the central nervous system in cases of generalized histoplasmosis (*Histoplasma capsulatum*) appears to be comparatively rare, occurring in 12 (10 per cent.) of the 120 reviewed. Two previously unpublished cases from the autopsy files of the Department of Pathology, Indiana University School of Medicine, Indianapolis, are fully reported; both were boys, one 14 and the other two years old.

313. Fitzpatrick (T. J.) & Neiman (B. H.). **Histoplasma capsulatum infection associated with gastric ulcer and fatal haemorrhage.**—*Arch. intern. Med.*, 91, 1, pp. 49–55, 4 figs., 1953.

From St. Joseph's Hospital, Joliet, Illinois, the authors present a case of generalized histoplasmosis (*Histoplasma capsulatum*) in a 63-year-old male

patient. Death resulted from a massive gastric haemorrhage following the erosion of a blood vessel by an ulcer, in which the fungal elements were very abundant, suggesting the possibility of an etiological relationship.

314. Weiss (E. D.) & Haskell (B. F.). **Anorectal manifestations of histoplasmosis.** —*Amer. J. Surg.*, 84, 4, pp. 541–544, 3 figs., 1952.

A fatal case of disseminated histoplasmosis associated with the yeast form of *Histoplasma capsulatum* and involving the anus and rectum is described from Philadelphia. The use of ethyl vanillate [1, No. 2142 and next entries], the only effective therapeutic agent, is contra-indicated by its toxicity.

315. Ellis (F. F.), Scott (R. J.), & Miller (J. M.). **Treatment of progressive disseminated histoplasmosis with ethyl vanillate and propamidine**—*Antibiotics*, 2, 7, pp. 347–350, 1952.

This is a joint report from the Veterans Administration Hospitals, Roanoke, Virginia, and Fort Howard, Maryland, of a case in a 44-year-old patient of progressive disseminated histoplasmosis which was successfully treated by the oral administration of ethyl vanillate [2, No. 297] and topical applications of propamidine [1, Nos. 616, 1620] to a lesion on the epiglottis.

316. Crawford (O. W.). **The diagnosis and incidence of histoplasmosis in children.** —*J. nat. m. Ass.*, 44, 6, pp. 437–439, 1952.

This is a review of the available information on histoplasmosis (*Histoplasma capsulatum*) in children, including the incidence, diagnosis, clinical forms, and differential diagnosis of the disease, together with the necessary laboratory studies. Ethyl vanillate [see preceding entries] is stated to be the only known therapeutic agent, and its toxicity makes its use dangerous.

317. Pitt (C. K.). **Histoplasmosis and the incidence of positive histoplasmin and tuberculin skin tests in children of North Alabama.**—*Sth. med. J.*, 45, 12, pp. 1172–1174, 1952.

The results are given of histoplasmin and tuberculin skin tests on 780 children between the ages of a few months and 19 years, mostly living within 25 miles of Decatur, North Alabama. The histoplasmin tests showed 19·3 per cent. of the children positive, and X-rays of the majority of these revealed scattered calcified points in the lungs. No child under one year showed a positive reaction, but 10·4 per cent. of those between one and five, 26·6 per cent. between six and nine, and 32·6 per cent. between ten and 19 were positive histoplasmin reactors. Two cases of histoplasmosis (*Histoplasma capsulatum*) in children are described, one demonstrating the similarity of healed lung lesions to those of tuberculosis, the other an example of mild or intermediate histoplasmosis.

318. Rohn (R. J.) & Bond (W. H.). **The value of routine bone marrow culture for Histoplasma capsulatum in pediatric haematology.**—*Blood*, 8, 4, pp. 329–335, 1 fig., 1953.

Of 76 bone marrow cultures procured, with the technical assistance of Edith Haynes, from patients suffering from various haematological disorders at the James Whitcomb Riley Hospital for Children, Indianapolis, Indiana, five (6·5 per cent.) yielded *Histoplasma capsulatum*. In two of these cases, which terminated fatally, organisms were observed on direct examination of the marrow and the cultures were therefore only of confirmatory value. In the other three, however, the marrow showed no distinguishing features and diagnosis could be established solely by means of culture. Hence it would

appear that routine marrow culture for *H. capsulatum*, though of little value for adults [1, No. 2441], is a useful aid to diagnosis in children.

319. Ruckett (T. F.). **Pulmonary histoplasmosis. A study of twenty-two cases with identification of H. capsulatum in resected lesions.**—*Amer. Rev. Tuberc.*, 67, 4, pp. 453–476, 17 figs., 1953. [Spanish and French summaries.]

From the Fitzsimons Army Hospital, Denver, Colorado, the author describes the clinical, bacteriological, roentgenographic, and histopathological features of 22 cases of pulmonary histoplasmosis (*Histoplasma capsulatum*) diagnosed by means of histological study of resected pulmonary tissue. The organisms in healed or healing lesions are believed to be non-viable.

320. Johnson (J. E.) & MacCurdy (J. M.). **Pulmonary histoplasmosis diagnosed by scalene node biopsy.**—*Amer. Rev. Tuberc.*, 66, 4, pp. 497–500, 1 fig., 1952.

The purely inferential basis of most diagnoses of benign histoplasmosis is stressed and an exceptional case from Texas is presented, in which a biopsy of a lymph node from the surface of the scalenus anticus muscle of an asymptomatic youth with multiple pulmonary calcifications yielded cultures of *Histoplasma capsulatum*. The importance of culturing such biopsied material and of the histological examination of specimens is emphasized.

321. Murphy (R. J.) & Davies (W. H. Jr.). **Histoplasmin sensitivity in selected areas of North Carolina with report of a case of probable histoplasmosis in a child.**—*N. Carolina med. J.*, 13, 10, pp. 556–559, 4 figs., 1952.

Histoplasmin sensitivity is more common in North Carolina than was originally thought, especially in the eastern and western districts of the State. Two surveys involving 203 and 774 schoolchildren showed, respectively, 42 and 12·5 per cent. reactors, but this marked difference may be due to the use of histoplasmin from different sources for each survey.

A probable case of benign histoplasmosis (*Histoplasma capsulatum*) in a child is described, but cultural studies of the bone marrow showed no growth after a month.

322. Floch (H.). **Sur l'histoplasmose et sa présence en Guyane française.** [On histoplasmosis and its presence in French Guiana.]—*Ann. Parasit. hum. comp.*, 28, 1–2, 1953.

After briefly reviewing the history of histoplasmosis (*Histoplasma capsulatum*) and describing its geographical distribution, the author adduces evidence that the disease is endemic in French Guiana and describes the first case of human infection found there, in a 16-year-old male Creole. The condition, which terminated fatally, was one of generalized histoplasmosis simulating Banti's disease.

323. Collier (W. A.) & De La Fuente (A. A.). **The histoplasmine test in Surinam.**—*Docum. Med. geogr. trop.*, 5, 2, pp. 103–108, 1953.

Histoplasmin tests may evoke positive reactions up to 72 hours after application, so that evaluations after 48 hours may give an unduly low frequency. Of 1,704 persons (1,005 men and 699 women) tested in Surinam, 760 reacted positively and 332 equivocally. The positive male reactors numbered 515 (51·2 per cent.) and the female 245 (35·1), the maximum percentages occurring in the age groups 30 to 39 (60·7) and 40 to 49 (53·7), compared with only 13·8 in the 0 to 4 and a general average of 44·6 [cf. 1, Nos. 1917, 1918]. Creoles yielded a somewhat higher percentage of positive reactors (48·1) than the other races tested. The potential significance of regionally differing

sensitivity to histoplasmin in children for the epidemiology of histoplasmosis (*Histoplasma* [*capsulatum*]) [2, Nos. 85, 86, and next entry] is briefly discussed.

324. Wildervanck (A.), Collier (W. A.), & Winckel (W. E. F.). **Two cases of histoplasmosis on farms near Paramaribo (Surinam); investigations into the epidemiology of the disease.**—*Docum. Med. geogr. trop.* (formerly *Docum. neerl. indones. Morb. trop.*), 5, 2, pp. 103–108, 2 figs., 1953.

Cases of inflammatory reticulosis and cellular lymphadenitis in boys (a ten-year-old Creole and a 13-year-old Hindustani) are reported from farms near Paramaribo, Surinam, the first terminating fatally. Inclusion bodies resembling *Histoplasma* [*capsulatum*: see preceding entry] were found on direct examination by means of mice tests, as well as in the spleens of a series of mice injected intraperitoneally with material from arthropods and vertebrates, but pure cultures were unobtainable. Evidence for the implication of mosquitoes in the transmission of infection from unpublished work by Collier and Bruyning is adduced in the concluding discussion.

325. Collier (W. A.) & Winckel (W. E. F.). **Beiträge zur geographischen Pathologie von Suriname. 2. Vögel als Träger von Histoplasmaartigen Mikroorganismen.** [Contributions to the geographical pathology of Surinam. 2. Birds as carriers of *Histoplasma*-like micro-organisms.]—*Z. Hyg. InfektKr.* 135, 3–4, pp. 338–340, 1952.

Micro-organisms resembling *Histoplasma* [*capsulatum*] were detected in the abdomen of one sick hen and the orbit of another at Paramaribo, Surinam [see preceding entries], while similar elements occurred in 40 out of 230 swabs (17·4 per cent.) from healthy fowls. They were further observed in the spleens of three out of 30 Manila ducks and in various wild birds of the neighbouring savannah region.

326. Winckel (W. E. F.), Collier (W. A.), & Treurniet (A. E. G.). **Contributions to the geographical pathology of Surinam. 5. First case of generalized histoplasmosis in Surinam.**—*Docum. Med. geogr. trop.* (formerly *Docum. neerl. indones. Morb. trop.*), 4, 3, pp. 219–222, 4 figs., 1952.

From the Government Hospital, Paramaribo, Surinam, the authors describe the first case of generalized histoplasmosis (*Histoplasma capsulatum*) in the country [2, Nos. 86, 306, 307, 308 and next entry]. The patient, a 55-year-old Hindu woman, succumbed to the disease. The fungus was demonstrated by biopsy and autopsy, both histologically and in inoculation experiments on hamsters and white mice.

327. Wildervanck (A.), Winckel (W. E. F.), & Collier (W. A.). **Tropical eosinophilia combined with histoplasmosis.**—*Docum. Med. geogr. trop.* (formerly *Docum. neerl. indones. Morb. trop.*), 5, 1, pp. 67–71, 1953.

Three cases of tropical eosinophilia are reported from Paramaribo, Surinam. All the patients (a 30-year-old soldier of Hindu origin, a Creole girl of nine, and a Creole boy aged about 15) were infected by *Histoplasma capsulatum* [see preceding entries], a coincidence which might point to a new factor in the etiology of tropical eosinophilia.

328. Tucker (H. A.) & Kvisselgaard (N.). **Histoplasmin and tuberculin sensitivity in Burma. Study of tests on 3,558 subjects.**—*Bull. World Hlth Org.*, 7, 2, pp. 189–200, 1 fig., 2 maps, 1952. [French summary.]

Histoplasmin sensitivity tests, using Lilly antigen (CT 189, 1 in 100), in a Rangoon prison in April and May, 1952, revealed a prevalence of 27·1 per cent. among 1,089 prisoners, prison personnel, and their families. At another

prison in lower Burma, using a 1 in 1,000 dilution, 14·5 per cent. of the 1,194 persons tested developed indurations of or exceeding 5 mm. in diameter, which was regarded as a positive reaction.

In the hot, dry region of Upper Burma, positive reactors among 142 subjects tested with a 1 in 100 dilution numbered 8·4 per cent., while a group of 1,133 tested at 1 in 1,000 comprised only 0·4 per cent., thereby demonstrating a significantly lower frequency of histoplasmin sensitivity in the arid zone of the country.

The same persons were tested concurrently with 0·001 mg. of purified protein derivative. Roentgenograms of two histoplasmin- and tuberculin-positive individuals revealed the typical picture of 'multiple calcific pulmonary foci' associated with histoplasmosis. The sum of circumstantial evidence was concluded to be strongly in favour of the occurrence of *Histoplasma capsulatum* in Burma.

329. Hennemann (H. H.), Sattler (L.), & Semmler (U.). **Untersuchungen über Tuberkulin- und Histoplasminempfindlichkeit bei Erwachsenen.** [Studies on tuberculin and histoplasmin sensitivity in adults.]—*Z. ges. inn. Med.*, 7, 7, pp. 326–331, 1952.

Of 173 adults with pulmonary and hilar calcifications tested for tuberculin sensitivity at the Charité University Clinic, Berlin, 167 (96·5 per cent.) reacted positively. On the other hand, 368 adults, 240 of whom were suffering from active pulmonary tuberculosis, gave exclusively negative responses to histoplasmin.

330. Fréour (P.) & Claveleau. **Note sur la transmission expérimentale de l'histoplasmose par voie pulmonaire.** [Note on the experimental transmission of histoplasmosis by the pulmonary route.]—*J. franç. Méd. Chir. thoraç.*, 5, 6, pp. 578–583, 2 figs., 1951.

An account is given of experiments at Bordeaux in which the inoculation of *Histoplasma capsulatum* [1, No. 2130] into the pulmonary system of guinea-pigs and dogs [cf. 1, No. 2135; 2, Nos. 71, 89] resulted in a pathological condition resembling splenopneumonia with generalized extension, especially to the liver, spleen, and ganglia. Fungal elements are expelled through the upper respiratory channels, the faeces, and occasionally the urine.

331. Königsbauer (H.). **Über die Wirkung von ACTH und Corton auf die experimentelle Histoplasmose der Ratte.** [On the influence of ACTH and cortone on experimental histoplasmosis in the Rat.]—*Zbl. Bakt.*, Abt. 1 (*Orig.*), 159, 6–7, pp. 473–476, 2 figs., 1953.

In the author's laboratory experiments at Knittelfeld, Styria, Austria, daily intraperitoneal injections of ACTH (30 mg. per kg.) failed to change the course of experimental histoplasmosis (*Histoplasma capsulatum*) in white rats, while cortone (cortisone) at a dosage of 50 mg. per kg. body weight actually stimulated the spread of infection.

332. Salvin (S. B.). **Immunization of Mice against Histoplasma capsulatum.**—*J. Immunol.*, 70, 3, pp. 267–270, 1 graph, 1953.

At the Rocky Mountain Laboratory (Public Health Service), Hamilton, Montana, a method was devised for the protection of white Swiss mice up to 35 days old against death from infection by *Histoplasma capsulatum* [cf. 1, No. 1181]. Temporary immunization was effected by intraperitoneal inoculation with yeast-like cells of the fungus or the broth filtrate from the growth of the mycelium or cells. Subsequent intracerebral challenge revealed protection against 300 to 400 LD_{50} of *H. capsulatum*. Cross-protection between the latter

and *Blastomyces dermatitidis* was not observed in the strains tested, using acetone-dried cells of the yeast-like phase as protective antigens.

333. Cole (C. R.), Chamberlain (D. M.), & Prior (J. A.). **Incidence, symptomatology, and diagnosis of canine histoplasmosis.**—*Proc. Amer. vet. med. Ass.*, pp. 179–181, 1951. [*V.B.*, 23, 7, p. 294, 1953.]

A description is given of canine histoplasmosis (*H*[*istoplasma*] *capsulatum*) in the United States [1, Nos. 2283–2285] with chronic cough or chronic dysentery. The respiratory, digestive, and lymphatic systems were most commonly affected. Of 2,867 dogs subjected to the histoplasmin skin sensitivity test, 38 (1·32 per cent.) reacted positively and in 26 of these infection was confirmed.

334. Dubois (A.), Janssens (P. G.), & Brutsaert (P.). **Un cas d'histoplasmose africaine. Avec une note mycologique sur Histoplasma duboisii n.sp. par R. Vanbreuseghem.** [A case of African histoplasmosis. With a mycological note on *Histoplasma duboisii* n.sp. by R. Vanbreuseghem.]—*Ann. Soc. belg. Méd. trop.*, 32, 6, pp. 569–583, 3 pl. (1 col.), 1952. [Flemish summary.]

Histoplasma duboisii Vanbreuseghem n.sp., isolated from the pus of a cervical ganglion in a 38-year-old European resident for six years in the Belgian Congo, is characterized by globose micro- and macroconidia, the former 2 and the latter 13 μ in diameter. Intratesticular inoculation into the guinea-pig resulted, in the first place, in the production of typical *H. capsulatum* spores, 3 to 4 by 2 μ, developing later into the densely capsulate elements of *H. duboisii*, which are reproduced by a bud separating from the mother-cell by fission. On the basis of these studies, eight other African cases described in the relevant literature [cf. 1, No. 1158] or in personal communications by J. T. Duncan are attributed to *H. duboisii*.

335. Arel (F.). **À propos d'un cas de pied de Madura.** [In connexion with a case of Madura foot.]—*Mém. Acad. Chir.*, 77, 29–30, pp. 934–937, 4 figs., 1951.

All attempts at a cure by means of sulphonamides, penicillin, and streptomycin injections, topical applications of lugol, and radiotherapy were unavailing in a case of Madura foot in a 20-year-old farm labourer in Turkey, and finally it became necessary to resort to amputation.

336. Benenzon (R.), Sala (E. C.), & Blanco (M. C.). **Pie de madura (micetoma podal).** [Madura foot (mycetoma pedis).]—*Diá méd.*, 24, 31, pp. 724–728, 9 figs., 1952.

An account is given of the clinical and anatamopathological aspects of an unusual case of Madura foot attributed to *Monosporium apiospermum* [*Allescheria boydii*: 1, No. 1935; 2, No. 94] in a 23-year-old sawmill-worker who had been injured by a falling plank.

A preliminary cure was effected by a combination of radiotherapy (2,000 R) and 18 gm. terramycin given over a period of ten days. Six weeks later slight pus exudation occurred and another ten-day series of treatments was initiated, consisting of 2,000 R and 10,000,000 parts penicillin altogether. Subsequent radiographs confirmed that the normal structure was practically restored.

337. Janke (D.). **Penicillinbedingte Krankheitserscheinungen an Haut, Schleimhaut, Prostata und Nebenhoden nach Sensibilisierung durch hefeähnliche Pilze (Gruppe Candida).** [Diseases of the skin, mucous membranes, prostate, and epididymis caused by penicillin after sensitization by yeast-like organisms (*Candida* group).]—*Derm. Wschr.*, 125, 23, pp. 525–534, 8 figs., 1952.

From the University Skin Clinic, Marburg a. d. Lahn, the author describes

reports on 11 cases of side effects, including prostatitis, epididymitis, lingua nigra, and exacerbation of mycotic foci, induced by penicillin as a sequel to spontaneous sensitization by yeasts of the *Candida* group. *In vitro* experiments yielded no evidence for the direct stimulation of *C. albicans* by penicillin, but depression of the bacterial flora on the peptone-malt agar medium indirectly promoted the development of the fungus, and comparable results were observed in human subjects. The performance of intracutaneous tests is recommended to determine the possibility of mycotic sensitivity before the institution of penicillin therapy [see also 1, No. 2474; 2, No. 98].

338. Stubben (B.). **Sakcharophile Mundmikrobien (Leuconostoc, Candida, Oospora, Micrococcus luteus.)** [Saccharophilic oral microbes (*Leuconostoc, Candida, Oospora, Micrococcus luteus*).]—*Arch. Hyg., Berl.*, 136, 1, pp. 67–73, 1952. [English and French summaries.]

The results of experiments at the Institute of Hygiene, University of Cologne, showed that *Candida albicans* and *Oospora lactis* were among the normal oral microspora which throve on a medium containing 10 per cent. saccharose. The presence of *C. albicans* was demonstrated in mouth smears from 52 (39 per cent.) of the 132 persons examined; its known pathogenicity to mice was confirmed.

339. Weld (Julia T.). **Candida albicans. Rapid identification in cultures made directly from human materials.**—*Arch. Derm. Syph., Chicago*, 67, 5, pp. 473–478, 7 figs., 1953.

In continuation of previous work [2, No. 114] the author shows that *Candida albicans* can be very rapidly identified in cultures made directly from samples of human clinical material on Levine's eosin-methylene blue agar. For speed and reliability the cultures should be incubated in 10 per cent. carbon dioxide rather than in air. In carbon dioxide the characteristic feathery colonies of *C. albicans* appeared in 66 per cent. of the cultures from the 50 positive specimens in one day and in 94 per cent. in two days. In 42 per cent. of the plates unidentifiable yeasts were also present but showed no mycelial formation.

340. McClary (D. O.). **Factors affecting the morphology of Candida albicans.**—*Ann. Mo. bot. Gdn*, 39, 2, pp. 137–164, 3 pl., 1952.

At the Henry Shaw School of Botany, Washington University, a chemically defined, readily modified medium was employed to determine the factors affecting the morphology of the highly variable *Candida albicans* (A.T.C.C. 2091). In general, for hyphal production the organism required a readily assimilable but not so readily fermented carbohydrate, phosphorus, potassium, and biotin, an optimum temperature of 25° to 30° C., and an optimum pH near 5. The yeast-like phase resulted from deficiency in any of the above-mentioned nutrients, temperatures of 37° to 40° (especially on solid media), an unfavourable pH, and the presence of toxic substances. It also predominated in the declining phases of a culture as the hyphae degenerated. Chlamydospores were produced chiefly as the result of a too high or too low pH or phosphorus deficiency [cf. 2, No. 96]. The organism grew poorly, if at all, in an anaerobic jar on solid media. Growth on sucrose medium was considerably better than on readily fermented glucose and consistently produced the greater proportion of hyphae.

341. Nickerson (W. J.) & Mankowski (Z.). **A polysaccharide medium of known composition favouring chlamydospore formation in Candida albicans.**—*J. infect. Dis.*, 92, 1, pp. 20–25, 3 figs., 1953.

At the Arnold Biological Laboratories, Brown University, Providence, Rhode

Island, a synthetic medium containing polysaccharide as the carbon source and ammonium sulphate as that of nitrogen permits slow growth of *Candida albicans* with extensive hyphal formation and abundant chlamydospore production. The purification of soluble starch by ammonium sulphate to yield a product free of reducing sugar is described. Trypan blue (0·1 gm.), added to the purified starch medium, is selectively accumulated by the chlamydospores. The development of hyphae or chlamydospores is prevented by the addition of glucose or cysteine to the substratum.

342. Nikolowski (W.) & Müller (I.). **Generalisierte Soormykosen.** [Generalized thrush mycoses.]—*Derm. Wschr.*, 126, 41, 7 figs., pp. 969–976, 1952.

Four cases of generalized thrush mycosis (*Candida albicans*) at the Skin Clinic at Tübingen University, Germany, are used to illustrate this discussion on the differential diagnosis of the disease and its development in relation to constitutional illness, e.g., diabetes mellitus, and antibiotic treatment.

343. Reynell (P. C.), Martin (E. A.), & Beard (A. W.). **Monilia peritonitis.**—*Brit. med. J.*, *1953*, 4816, p. 919, 1953.

From the Radcliffe Infirmary, Oxford, the writers report a case (believed to be the first) of peritonitis caused by *Candida albicans*, which obtained access to the peritoneal cavity after the combined administration of aureomycin and A.C.T.H. [adrenocorticotrophic hormone] for the relief of a duodenal ulcer [cf. 2, No. 109].

344. Neufeld (O.) & Wallbank (W. L.). **Case of Candida asthma and its management.**—*J. Michigan med. Soc.*, 51, 11, pp. 1419–1420, 1952.

The case of a 60-year-old man who had suffered from asthma since the age of seven is reported from Toledo, Ohio. There was no family history of asthma, and no surgical or medical treatment except adrenalin exerted any beneficial effect. Sputum cultures were persistently positive for *Candida albicans* as well as *Staphylococcus aureus* and a haemolytic *Streptococcus*, but little notice was taken of this at first, since the patient was also suffering from tuberculosis, a condition with which *C. albicans* is often associated. However, an aerosol of 10 per cent. sodium caprylate in propylene glycol eliminated all asthma symptoms after four weeks and sputum cultures became consistently negative for the yeast.

345. Mendelblatt (D. L.). **Moniliasis. A review and a report of the first case demonstrating the Candida albicans in the cornea.**—*Amer. J. Ophthal.*, 36, 5, pp. 379–385, 4 figs., 1953.

From the Veterans Administration Center, Bay Pines, Florida, the author reports a case of infection by *Candida albicans* of the cornea of the left eye in a 56-year-old patient, associated with the presence of a foreign body. The resultant perforation finally necessitated enucleation. This appears to be the first case in the relevant literature demonstrating the fungus in the cornea with a complete pathological report.

346. Orie (N. G. M.). **Candida (Monilia) infection of the respiratory tract.**—*Dis. Chest*, 22, 1, pp. 107–117, 1952. [Spanish and French summaries.]

Candida albicans does not occur outside the human body and the attribution of 'dust infections' to this source is considered in most cases to rest on a false interpretation of sputum slides and cultures. The fungus is ubiquitous in the mouth but seldom found in the sputum. During eight years' experience at Groningen, Holland, the author has encountered only three cases of transient bronchopulmonary yeast infection.

347. Raton (D.). **Maladie des 'batteurs en grange'.** [Thresher's lung disease.]—*J. franç. Med. Chir. thoraç.*, 5, 5, pp. 430–433, 2 figs., 1951.

Cultures of sputum from a case of thresher's lung [2, Nos. 252, 253] which came under observation in France in April, 1949, yielded mycelial filaments with spores typical of *Monilia* [*Candida*] sp. A rapid improvement and eventual cure was effected by the use of potassium iodide.

348. **Antibiotic therapy and fungous infections.**—*New Engl. J. Med.*, 247, 13, pp. 491–492, 1952.

This editorial is a review of Kligman's paper [2, No. 98] on the occurrence of *Candida albicans* infections following antibiotic therapy.

349. Rossier (P. H.). **Antibiotica und Mykosen.** [Antibiotica and mycoses.]—*Helv. med. acta*, Ser. A, 19, 4–5, pp. 261–270, 6 figs., 1952.

The problem of the stimulus afforded to certain mycoses, notably those associated with *Candida albicans* and *Geotrichum* sp., by antibiotic therapy is discussed in the light of 34 contributions to the relevant literature [cf. preceding and next entries].

350. Smulewicz (J.). **Über einen Fall von Moniliasis der Lungen.** [On a case of pulmonary moniliasis.]—*Schweiz. med. Wschr.*, 83, 30, pp. 702–703, 4 figs., 1953. [English summary.]

From the Central Emek Hospital, Affula, Israel, the author reports a case of acute, widespread pulmonary moniliasis (*Candida albicans*), which developed in a 34-year-old female patient as a sequel to combined penicillin-streptomycin-aureomycin therapy [2, Nos. 98, 99, 109, and preceding entry]. A cure was effected by the administration of potassium iodide, para-aminobenzoic acid, and finally of penicillin at a dosage of 8,000,000 units daily for five days.

351. Vorreith (M.). **Generalisované kandidové mykosy (moniliasis) při therapii antibiotiky.** [Generalized candidosis (moniliasis) due to antibiotic therapy.]—*Las. Lék. čes.*, 92, 17, pp. 455–462, 16 figs., 1 diag., 1953. [Russian and English summaries.]

Among 3,000 necropsies at the Pathologico-Anatomical Department of Charles University, Prague, Czechoslovakia, were ten cases of pulmonary, gastric, and intestinal infection by *Candida albicans*, representing direct spread from the oral cavity and oesophagus, and involvement of the kidneys and spleen, denoting transport through the blood stream. The fungus was further responsible for granulomatous leptomeningitis in a 45-year-old male suffering from tabes dorsalis.

The pathogenesis of candidosis is discussed. Nearly all the patients had undergone antibiotic therapy, which is known to promote the development of *C. albicans* [see preceding entries] by some means not yet fully understood.

352. Frisk (A.). **Lungcandidos (monilios) och antibioticabehandling.** [Pulmonary candidosis (moniliasis) and antibiotic therapy.]—*Svenska Läkartidn.*, 49, 23, pp. 1493–1500, 1 graph, 1952.

A case of pneumonia associated with *Candida albicans* in a 42-year-old male worker in the fur trade is reported from the Sabbatsberg Hospital, Stockholm. Remedial measures, including the administration of penicillin and streptomycin, were successful, and in this connexion the risks of antibiotic therapy are discussed in the light of seven contributions to the relevant literature.

353. Klose (F.) & Schürmann (R.). **Experimentelle Untersuchungen über Soormykose. (Gleichzeitig ein Beitrag zu der von Castelli und Gaggini angegebenen**

serologischen Krebsdiagnose mit Oidium albicans). [Experimental studies on thrush mycosis. (Simultaneously forming a contribution to the alleged serological cancer diagnosis of Castelli and Gaggini with *Oidium albicans*).]—*Z. Hyg. InfektKr.* 134, 1, pp. 63–77, 8 figs., 1952.

In only three out of 46 cancer patients at the Hygienic Institute of Kiel University, Germany, could confirmation be obtained of Castelli and Gaggini's observation (*Schweiz. med. Wschr.*, 80, p. 56, 1950) that the serum of such persons can agglutinate culture suspensions of *Oidium* [*Candida*] *albicans*, for the identification of which it is advisable to use rabbit serum. *C. albicans* was found to occur in an innocuous form on the mucous membrane of the pharyngeal passages in some 5 per cent. of healthy subjects, but in view of the tendency of modern antibiotics to promote the growth of the fungus at the expense of its bacterial antagonists, an increase in the clinical importance of thrush is to be anticipated [see preceding entries]. The intravenous injection into rabbits of large doses (100 to 1 mg.) of beerwort agar culture suspensions consistently induced acute lesions resembling those of miliary tuberculosis, while smaller ones (0·5 to 0·05 mg.) resulted in chronic illness of the thrush type with a propensity to spontaneous recovery.

354. Nikolowski (W.). **Über Hauterscheinungsbilder der Soormykosen und deren Beziehungen zu den Antibiotika.** [On the dermatological symptoms of thrush mycoses and their relations to antibiotics.]—*Dtsch. med. Wschr.*, 78, 15, pp. 553–556, 1953.

The abnormal manifestations observed in recent years at the University Skin Clinic, Tübingen, Germany, among adults suffering from generalized moniliasis (*Candida albicans*) and the secondary 'id' forms of the complaint are discussed in the light of contributions to the relevant literature, with special reference to the contra-indication of antibiotic therapy in such cases [1, Nos. 2468–2470, 2474–2477].

355. Paine (T. F.). **In vitro experiments with Monilia and Escherichia coli to explain moniliasis in patients receiving antibiotics.**—*Antibiotics*, 2, 12, pp. 653–658, 3 figs., 1952.

Aureomycin, chloramphenicol, terramycin, penicillin, and streptomycin exert variable but slight effects on the growth of *Candida krusei* and *Saccharomyces cerevisiae in vitro*. In a liquid medium in mixed culture with *Escherichia coli* the growth of both yeasts, but particularly of *C. krusei*, is depressed. The addition of aureomycin impedes the growth of the bacterium and allows the yeasts to reach maximum development. The accessory growth factors needed by both yeasts can be supplied *in vitro* by intestinal bacteria. It is argued from these results that the upsetting of the yeast-bacteria balance in the intestine due to the administration of antibiotics may account for the vitamin-B deficiency symptoms often associated with moniliasis, on the assumption that the abnormally large yeast flora is absorbing all available supplies of the vitamin.

356. Albers (D. D.). **Monilial infection of the kidney; case reports.**—*J. Urol., Balt.*, 69, 1, pp. 32–38, 2 figs., 1953.

In one case of kidney infection reported from Oklahoma City, the unidentified species of *Candida* isolated from the urine appeared to be non-pathogenic, though it increased with sulpha therapy. The clinical course of the second case, from which *C. albicans* was isolated, confirmed the opinion that the yeast was definitely pathogenic. Treatment by nephrectomy, followed by therapy with Lugol's solution and gentian violet and alkalinization of the

urine, freed the latter from yeast cells, which returned, however, on dosage with sulpha drugs, though the patient showed no other symptoms. In both cases vaginal cultures were negative for the yeasts, and no suggestion as to their mode of entry could be made.

357. Eisman (P. C.), Geftic (S. G.), & Mayer (R. L.). **Virulence in Mice of colonial variants of Candida albicans.**—*Proc. Soc. exp. Biol., N.Y.*, 82, 2, pp. 263–264, 1953.

Several variants isolated at the Research Department, Ciba Pharmaceutical Products, Summit, New Jersey, from three cultures of *Candida albicans* exhibited differences in the morphology of the colonies and in microscopic appearance, as well as in pathogenicity to mice. A strain with smooth colonies was more virulent than one of a rough type. The results of previous chemotherapeutic tests with elkosin in *C. albicans* infections could not be reproduced in experiments with the new variants.

358. Beck (F.) & Löhlein (W.). **Über das Vorkommen von Hefen in Urinsedimenten penicillinbehandelter Kranker.** [On the presence of yeasts in urinary sediments of patients treated with penicillin.]—*Z. Haut- u. GeschlKrankh.*, 13, 2, pp. 54–58, 1952.

A brief discussion is given of the advantages and side effects of penicillin therapy, and the mode of excretion of the antibiotic. The microscopic examination of urinary sediments of 168 patients ranging from 10 to 70 years of age, who had been treated with penicillin at the Nuremberg General Hospital, revealed yeasts of the saccharomycete group [cf. 2, No. 337] in no less than 60 per cent., whereas only three of the 3,700 cases not receiving penicillin harboured these organisms. Two different yeast strains were observed, of which one, producing hyphae, was confined to the penicillin-treated patients.

359. Fuentes (C. A.), Schwarz (J.), & Aboulafia (R.). **Some aspects of the pathogenicity of Candida albicans in laboratory animals.**—*Mycopathologia*, 6, 3, pp. 176–181, 5 figs., 1952.

In experiments carried out at the University of Havana, Cuba, and the Cincinnati General Hospital, Ohio, United States, involving the intravenous injection of *Candida albicans* into various laboratory animals, rats were the most and guinea-pigs the least susceptible, mice and rabbits being intermediate in their reactions. In rats the symptoms included sleepiness, nasal and ocular haemorrhage, stiffness of the neck, poresis, and choreatic movements; in mice, sleepiness and poresis; in rabbits, sleepiness, stiffness of the neck, and choreatic movements; and in guinea-pigs, poresis only. At autopsy the organism was found mainly in the kidneys, brain, and gall-bladder, by far the most striking lesions being found in the brain, particularly in rabbits. In four out of seven male rats the prostate was greatly enlarged and filled with abscesses.

360. Zini (F.). **Sulla diffusione de lieviti patogeni nelle membrane corion-allantoidea e testacea dell' embrione di pollo.** [The diffusion of pathogenic yeasts in the chorio-allantoic and testaceous membranes of the chick embryo.]—*G. Batt. Immun.*, 44, 9–10, pp. 329–334, 3 figs., 1952. [French, English, and German summaries.]

The author describes some characteristics of the diffusion of *Candida albicans* in experimentally infected chorio-allantoic and testaceous membranes from chick embryos [1, No. 1200] and confirms the possibility of ascertaining the pathogenicity of a yeast by inoculating it into the chorio-allantoic membrane of a living embryo.

361. Borkowska-Trippenbach (B.) & Szwejkowski (H.). **Moniliasis u drobiu.** [Moniliasis in poultry.]—*Proc. 2nd Meet. Polish parasitol. Soc.*, p. 105, 1950. [English and Russian summaries. *V.B.*, 23, 6, p. 236, 1953.]

Several cases are reported of *C[andida] albicans* infection of chickens and turkeys [1, Nos. 1207, 2159; 2, No. 117] in Poland, the fungus being present in both the yeast and mycelial phases. The pathogenicity of *C. albicans* is tentatively attributed to a toxin secreted by the fungus.

362. Cruikshank (R.). **The epidemiology of some skin infections.**—*Brit. med. J., 1953*, 4801, pp. 55–59, 1953.

Of a number of skin diseases representing infection by a variety of parasites, tinea pedis and tinea capitis have here been chosen to represent the mycoses. The incidence of *Microsporum canis* and *M. audouini* in outbreaks of tinea capitis in Great Britain and the importance of accurate identification of the causal organisms are discussed in relation to the type of control measures appropriate in specific epidemics. Formalin vapour is mentioned as a useful disinfectant in barbers' shops.

In tinea pedis caused by *Trichophyton interdigitale*, *T. rubrum*, and *Epidermophyton floccosum*, remarkably little is known of the origin of the infection, which urgently requires elucidation so that rational preventive measures can be adopted.

363. Vanbreuseghem (R.). **Est-il possible d'améliorer la nomenclature et la classification des dermatophytes?** [Is any improvement in the nomenclature and classification of the dermatophytes possible?]—*Mycopathologia*, 6, 3, pp. 161–163, 1952.

Writing from the Prince Leopold Institute of Tropical Medicine, Antwerp, the author, after stressing the chaotic state of the nomenclature of the dermatophytes, gives four reasons for the difficulties experienced by mycologists in identifying these fungi correctly. They are (1) the existence of several systems of classification, (2) the extremely numerous synonyms, (3) polymorphism, and (4) pleomorphism. It is suggested that the only method of clearing up this difficult problem is the establishment of five or ten reference laboratories in different parts of the world, each of which would be familiar with the local forms of dermatophytes, where cultures could be sent for identification.

364. Mitchell (J. H.). **Ringworm of the hands and feet.**—*Postgrad. Med.*, 12, 6, pp. 509–516, 23 figs., 1952.

This well-illustrated review of tinea of the hands and feet includes infection by *Epidermophyton floccosum*, *Trichophyton gypseum* [*T. mentagrophytes*], *T. rubrum*, and *Candida* (? *albicans*). The importance of establishing a correct diagnosis by means of microscopic preparations and cultures and the dangers of sensitization to certain fungicides are discussed.

365. Gadrat (J.), Bazex (A.), & Dupré (A.). **La réaction d'Hotchkiss-MacManus comme méthode courante de détection des mycoses en dermatologie.** [The Hotchkiss-MacManus reaction as a current method for the detection of mycoses in dermatology.]—*Bull. Soc. franç. Derm. Syph.*, 59, 4, pp. 375–377, 1952.

Full particulars are given of the Hotchkiss-MacManus staining technique [1, No. 1824] and of the advantages derived from its application to the current detection of dermatomycoses and to the study of the chemical constitution of their agents.

366. Sharvill (D.). **The periodic acid-Schiff stain in the diagnosis of dermatomycoses.**—*Brit. J. Derm.*, 64, 9, pp. 329–333, 4 figs., 1952.

The author, working at King's College Hospital, London, emphasizes the difficulty of diagnosing many forms of ringworm by the examination of specimens by the usual potassium hydroxide method [1, No. 2463]. The periodic acid-Schiff stain [1, Nos. 2139, 2140; 2, No. 365], acting on the polysaccharides in the fungi, offers a very much surer method of diagnosis which can be used even by inexperienced workers. The secret of success lies in the collection of satisfactory specimens, methods for which are described in detail. The final staining is carried out by the McManus method [loc. cit.].

367. Krastelevskaya (Mme S. A.). **A new method of microscopic examination of fungi in pathological material.**—*Bull. Venerol. Derm., Moscow, 1952*, 1, pp. 25–27, 2 figs., 1952. [Russian. Abs. in *Excerpta med., Amst.*, Sect. IV, 6, 4, p. 390, 1953.]

Sodium sulphite solution at a strength of 10 per cent. is recommended as a useful keratolytic reagent for the study *in situ* of fungi in infected human nails and squamae.

368. Bayo Bayo (J. M.) & Pereiro Miguens (M.). **La acción fungistática y fungicida de los esteres del acido bromoacético asociados al cloruro de alkil (cetil) -dimetil-bencil-amonio.** [The fungistatic and fungicidal action of the esters of bromoacetic acid associated with alkyl (cetyl)-dimethyl-benzyl-ammonium chloride.]—Reprinted from *Arch. Inst. Farm exp.*, 4, 1, 34 pp., 17 figs., 11 graphs, 1952.

Particulars are given of *in vitro* experiments at the Institute of Experimental Pharmacology, Santiago de Compostela, Spain, demonstrating the strong fungistatic and fungicidal action of ethyl bromoacetate and ethylene glycol monobromoacetate, especially the former, on *Trichophyton tonsurans*, *T. mentagrophytes*, *T. schoenleini*, *Epidermophyton floccosum*, and *Microsporum canis*. Even more toxic than the foregoing to *T. mentagrophytes* (which served as a control) was the detergent alkyl (cetyl)-dimethyl-benzyl-ammonium chloride. Used in combination, the esters of bromoacetic acid and the detergent were mutually reinforced in fungistatic and fungicidal potency.

369. Benham (Rhoda W.). **Nutritional studies of the dermatophytes—effect on growth and morphology, with special reference to the production of macroconidia.**—*Trans. N.Y. Acad. Sci.*, Ser. ii, 15, 4, pp. 102–106, 1 diag., 1953.

Eighteen contributions to the relevant literature were consulted in the preparation of this contribution to the Symposium on Nutritional Studies of the Dermatophytes at the meeting of the Division of Mycology, New York Academy of Sciences, on 23rd January, 1953 [cf. 2, No. 127 and next entry].

370. Silva (Margarita). **Nutritional studies of the dermatophytes—factors affecting pigment production.**—*Trans. N.Y. Acad. Sci.*, Ser. ii, 15, 4, pp. 106–110, 1953.

This study of the factors affecting pigmentation in the dermatophytes, based on seven contributions to the pertinent literature, was presented as part of the Symposium on Nutritional Studies of the Dermatophytes referred to in the preceding entry.

371. Grunberg (E.) & Titsworth (E.). **The effect of animal and plant peptones on the development of the pigment of Trichophyton purpureum.**—*J. invest. Derm.*, 20, 3, pp. 197–200, 2 figs., 1953.

At the Baltimore Biological Laboratory the maximum production of purple pigment by *Trichophyton purpureum* [*T. rubrum*] was obtained in the presence

of the hexose, dextrose, while pentoses and di-, tri-, and polysaccharides were of little or no value in this respect. The origin of the peptone used as the nitrogen source is also important in pigment secretion [cf. 1, No. 1491], those of animal origin, especially bacto-peptone, or mixed animal and plant (polypeptone) being superior to plant products alone.

372. Bentley (Marian L.). **Enzymes of pathogenic fungi.**—*J. gen. Microbiol.*, 8, 3, pp. 365–377, 4 graphs, 1953.

In studies at the London School of Hygiene and Tropical Medicine, submerged growth of the dermatophytes *Microsporum canis* [1, No. 2506], *M. gypseum*, *Trichophyton rubrum*, and *T. mentagrophytes* was obtained by shaking. The respiratory rate (μl. oxygen consumed per hour per mg. dry weight) of washed cells from four- to six-day-old cultures was between 7 and 12, and the addition of a substrate did not increase it perceptibly. Acetone powders prepared from cells grown in shaken culture oxidatively deaminated amino acids to approximately the same extent as similar preparations of *Penicillium chrysogenum*.

373. Hare (P. J.). **A strain of Microsporum audouini producing numerous macroconidia on culture.**—*Brit. J. Derm.*, 64, 6, pp. 236–242, 11 figs., 1952.

From University College Hospital, London, the author reports a case of tinea capitis in a six-year-old girl caused by a strain of *Microsporum audouini* producing numerous macroconidia [2, No. 159], both on the standard Sabouraud type agar media and in a vitamin-free liquid medium. Inoculation experiments on guinea-pigs gave positive results.

374. Lewis (G. M.), Cawthon (K. S.), & Hopper (M. E.). **Tinea capitis (Microsporum audouini): has there been recent significant progress in therapy?**—*N.Y. St. J. Med.*, 52, 17, pp. 2105–2109, 1952.

A survey of the literature of the therapy of tinea capitis caused by *Microsporum audouini* shows that there has been little advance in the subject in recent years. The spontaneous cure rate is 25 per cent. of non-inflammatory and 90 per cent. of inflammatory cases over a period from three months to two years, so that the average cure rate of 40 per cent. claimed for a large number of drugs is hardly impressive, and roentgen epilation, with its cure rate of 50 per cent. in three weeks and 84 per cent. in three months, is always preferable if competent dermatologists are available to administer the treatment.

375. Sullivan (M.) & Bereston (E. S.). **A study of topical therapy in tinea capitis.**—*J. invest. Derm.*, 19, 3, pp. 175–178, 1952.

Of 13 compounds tested against tinea capitis (caused by *Microsporum audouini*) at the Johns Hopkins Hospital, Baltimore, 5-chloro-salicylanilide was the most effective, giving 73·1 per cent. cures in 108 cases. The authors give a warning that the results must be interpreted in the light of all inherent factors influencing the healing of fungus infections of the scalp.

376. Thomas (B. A.). **M. canis ringworm and loss of schooling.**—*Brit. med. J.*, *1953*, 4809, pp. 536–539, 3 figs., 1953.

The importance and methods of differential diagnosis between the types of tinea capitis due, respectively, to *Microsporum audouini* and *M. canis* are indicated and some epidemiological considerations regarding the latter form presented. The role of microsporosis as a cause of loss of schooling is discussed and the results of a survey of its incidence in the areas of the major education authorities in England and Wales are tabulated and analysed. An experiment

is described from Newport, Monmouthshire, where the complaint is caused almost exclusively by *M. canis*, involving the continuance at 19 schools of 24 children, the exclusion rule being waived. In no case was the infection disseminated, and it is concluded that absence from school is unnecessary. *M. canis*, moreover, is amenable to simple hygienic precautions and topical treatment with a mild fungicide, X-ray epilation being superfluous.

377. Saunders (W.). **Small scale epidemic of ringworm caused by a pet.**—*N.Y. St. J. Med.*, 52, 13, p. 1673, 1952.

An epidemic of tinea (*Microsporum lanosum*) [*M. canis*] involving eight humans and three dogs, contracted from an infected kitten, is reported from Watertown, New York. The human contacts were cured by assorted topical applications.

378. Peña Yanez (J.). **VII. Género 'Microsporum'. Caracteres generales y estudio de las especies. VIII. Género Epidermophyton. Caracteres generales y estudio de las especies.** [VII. The genus *Microsporum*. General characters and study of the species. VIII. The genus *Epidermophyton*. General characters and study of the species.]—*Med. colon., Madr.*, 20, 4, pp. 306–342, 18 figs. (3 col.), 1952.

The species comprised in this critical study of the genus *Microsporum*, which is supplemented by a bibliography of 50 titles, are *M. audouini*, *M. canis*, and *M. gypseum*.

Epidermophyton is represented by *E. floccosum* and a bibliography of 23 titles is appended.

379. Hughes (J. W.). **A liquid synthetic medium suitable for the differentiation of Microsporum audouini Gruby 1843, and of Microsporum canis Bodin 1902.**—*Brit. J. Derm.*, 64, 9, pp. 334–338, 2 figs., 1952.

A medium which has given very satisfactory results in preliminary experiments in the differentiation of *Microsporum audouini* and *M. canis* consists of 2 gm. acid hydrolysed casein, 25 gm. glucose, 2·5 gm. potassium dihydrogen phosphate, 0·5 gm. magnesium sulphate, 0·1 gm. each of sodium chloride and calcium chloride, 1,000 μgm. aneurin [vitamin B^1], 200 μgm. riboflavin, 500 μgm. each of nicotinic acid, calcium-*d*-pantothenate, pyridoxine, choline chloride, *p*-aminobenzoic acid, and *i*-inositol, 100 μgm. each of biotin and folic acid, 200 μgm. iron, 100 μgm. copper, 20 μgm. each of manganese, molybdenum, and boron, 2,000 μgm. zinc, 10 mg. each of adenine, guanine, uracil, and xanthene, and distilled water to 1,000 ml., pH adjusted to 5·6.

After 14 days the entire colony of *M. audouini* does not exceed 1 cm. in diameter, the raised, white centre ranging from pin's head size to 3 to 4 mm. in diameter, while the periphery only just reaches the surface, with the majority of the light brownish straw-coloured hyphae below it. On the other hand, a single colony of *M. canis* may attain a diameter of 6 cm. and form a creamy-white mycelium about 1 mm. in thickness.

So far this mode of identification has given complete agreement with the clinical diagnosis, the La Touche hanging drop technique [1, No. 2511], and Walker's hyphal fusion method [1, No. 1971].

380. Loewenthal (K.). **Effect of roentgen rays on Microsporum audouini. An in vitro study.**—*Arch. Derm. Syph., Chicago*, 67, 2, pp. 191–193, 1953.

At the State University of New York, Brooklyn, two freshly isolated strains of *Microsporum audouini*, growing on peptone dextrose agar, received one exposure each of 340 r of unfiltered roentgen rays. Neither the irradiated colonies nor their descendants showed gross or microscopic changes attribut-

able to the treatment. In previous comparable experiments on *M. canis* pleomorphism was accelerated and intensified and fuseaux formation degraded.

381. Whittle (H.). **Is scalp ringworm in children a self-limiting disease? An epidemic of unusually mild form produced by Microsporum audouini, dysgonic type.**—*Lancet*, 265, 6775, pp. 10–12, 1953.

An epidemic of tinea capitis affecting 11 boys and two girls between three and eight years old in a small Bedfordshire village is attributed to the dysgonic mutant form of *Microsporum audouini*, characterized by atypical, small lesions, developing very slowly. Most of the cases responded satisfactorily to daily topical applications of Whitfield's ointment, phenyl-mercuric-nitrate ointment, or copper sulphate lotion. This is believed to be the first outbreak incited exclusively by the dysgonic type of the fungus, which has, however, previously been recovered in association with the more common eugonic form [cf. 1, Nos. 1971, 2178].

382. Berdibayeff (U. B.). **Cultural characteristics of micro-organisms causing dermatomycoses in Kazakstan.**—*Bull. Venerol. Derm., Moscow, 1952*, 1, p. 52, 1952. [Russian. Abs. in *Excerpta med., Amst.*, Sect. IV, 6, 4, p. 390, 1953.]

Trichophyton schoenleini was identified as the agent in 20·8 per cent. of the dermatomycoses encountered in the Kazakstan region of the U.S.S.R., other *T.* spp. in 75·6, and *Microsporum* spp. in 3·6.

383. Blank (F.). **The chemical composition of the cell walls of dermatophytes.**—*Biochim. biophys. Acta*, 10, 1, pp. 110–113, 1 fig., 1953. [French and German summaries.]

At the Department of Bacteriology and Immunology, McGill University, Montreal, the mycelia of 15 species of dermatophytes were extracted and oxidized as directed by Scholl (*Mh. Chem.*, 29, pp. 1023–1036, 1908). Debye-Scherrer diagrams of the prepared cell walls revealed the presence of chitin alone and yielded no evidence of cellulose or other high polymeric substance in the membranes. These findings were corroborated by nitrogen determinations of the same material, which demonstrated quantitatively that the framework of the cell walls consists exclusively of chitin.

384. Vilanova (X.) & Casanovas (M.). **Observations cliniques et mycologiques sur une epidémie de trichophytie transmise du Lapin à l'Homme.** [Clinical and mycological observations on an epidemic of trichophytosis transmitted from the Rabbit to Man.]—*Pr. méd.*, 59, 82, pp. 1760–1762, 8 figs., 1951.

From Barcelona, Spain, the authors describe a new ringworm affecting rabbits, caused by a variety of *Trichophyton mentagrophytes* which they designate 790 VC. The 14 human patients contracting the complaint developed lesions of the circinate herpes type with an inflammatory tendency, amounting in some cases to kerion.

385. Vilanova (X.) & Casanovas (M.). **A study of a new species of the genus Microsporum.**—*Brit. J. Derm.*, 64, 6, pp. 231–235, 4 figs., 1952:

Particulars are given of three cases of tinea capitis associated with infections by *Microsporum* 137 VC, two at Barcelona and one in the province of Logroño, Spain [see preceding entry]. The cultural and morphological features of the presumed new species are described and compared with those of *M. canis*, the points of similarity and difference being tabulated. On Conant's medium *M.* 137 VC produces abundant, incurvate, hyaline, smooth closterospores, with two to 15 cells, 28 to 100 by 8 to 16 μ, and comparatively few sessile aleuriospores, 4 by 2 μ.

386. Bergamasco (A.). **Metodo di preparazione della tricofitina diagnostica mediante l'estrazione fenolica.** [Method of preparation of diagnostic trichophytin by means of phenolic extracts.]—*Arch. ital. Derm.*, 25, 2, pp. 87–88, 1952.

The author fully describes his method for the preparation of trichophytin for diagnostic purposes by phenolic extraction from cultures of *Trichophyton gypseum ast*[*eroides* = *T. mentagrophytes*], followed by successive purification through precipitation with methyl alcohol.

387. Grimmer (H.) & Rust (S.). **Tierexperimentelle Untersuchungen über den Einfluß der tiefen Trichophytie auf die epidermale Sensibilisierung durch Dinitrochlorbenzol.** [Studies by means of animal experiments on the effects of deep trichophytosis on epidermal sensitization by dinitrochlorobenzene.]—*Arch. Derm. Syph., Berl.*, 194, 6, pp. 663–670, 5 graphs, 1952.

The results of inoculation experiments with a very virulent strain of *Trichophyton gypseum asteroides* [*T. mentagrophytes*] on albino guinea-pigs at the Rudolf Virchow Hospital, Berlin, indicated that deep trichophytosis induces a temporary decline in specific reactivity to epidermal sensitization by dinitrochlorobenzene.

388. Sicault (G.), Gaud (J.), Salm (G.), & Faure (J.). **Les teignes au Maroc.** [Tineas in Morocco.]—*Bull. Inst. Hyg. Maroc*, N.S., 11, 3–4, pp. 165–183, 6 figs., 1951.

This is a useful tabulated survey of the etiology, prevalence in relation to geographical, racial, physiological, and social factors, symptomatology, mechanism of infection, and therapy of tineas in Morocco [cf. 1, No. 2498]. Two species of fungi were responsible for 98 per cent. of the cases observed, namely, *Achorion* [*Trichophyton*] *schoenleini* and *T. violaceum*, the former being three times more prevalent than the latter in the identifications (roughly 2,000) made up to the time of writing. *T. glabrum* and *T. acuminatum* [*T. sabouraudi*] are also occasionally involved. In general, *T. schoenleini* predominates at moderate elevations on the northern slopes of Mt. Atlas, at Marrakesh, and in the vicinity of Agadir, while the other species are most frequent on the Atlantic coast and in the high mountains. Boys are more susceptible to the complaint than girls and the majority of cases occur in the 5- to 12-year-old age group. Infection is disseminated almost exclusively by the use of contaminated instruments in barbers' shops. Therapy and prophylaxis present complex problems. The most hopeful line of approach in urban districts would be the establishment of centres of radiotherapy and epilation, while school hygiene and topical treatment to prevent the extension of primary foci, secondary microbial contamination, and the spread of infection offer the greatest prospect of success in rural areas. From the limited statistics available the incidence of tinea appears to be declining in Morocco, where the percentages among native, Jewish, and European schoolchildren in 1938–9 were 32·7, 13·2, and 0·2, respectively, compared with 20·7, 9·9, and 0·2, respectively, in 1948–9.

389. Lewis (G. M.), Hopper (Mary E.), & Scott (M. J.). **Generalized Trichophyton rubrum infection associated with systemic lymphoblastoma. Report of three cases.**—*Arch. Derm. Syph., Chicago*, 67, 3, pp. 247–262, 6 figs., 1953.

Three cases of extensive cutaneous involvement with *Trichophyton rubrum* [see next entry], associated with systemic lymphoblastoma, are reported from New York, two of the patients being males aged 62 and 71 and the third a 35-year-old negress. The generalization of the skin mycosis was considered to be related, at any rate in part, to the underlying lymphoma. Mycological

study is regarded as essential for the differentiation of widespread and atypical manifestations of *T. rubrum* from other dry, red, scaly disorders, such as neuro-dermatitis, psoriasis, and mycosis fungoides, in all of which pruritis is common. Incidentally, the fungus was shown to be an ectothrix invader of scalp hair and the cause of small, painful abscesses resulting from implication of the hair follicles in the otherwise usual plaque-like involvement.

390. Rothman (S.). **Systemic disturbances in recalcitrant Trichophyton rubrum (purpureum) infections.**—*Arch. Derm. Syph., Chicago*, 67, 3, pp. 239–245, 3 figs., 1953.

In 13 out of 20 cases of intractable infection of the palms, soles, and nails by *Trichophyton rubrum* [see preceding entry] observed within the last three years at the University of Chicago Clinics, oral testing revealed increased tolerance of glucose. As a working hypothesis it is postulated that, where the glucose content of the skin and horny layer is low, dermatophytes adapt themselves to metabolize other substances and thereby acquire resistance to fungistatic agents which primarily inhibit carbohydrate utilization. Thyroid medication, combined with the application of fungistatic agents, appears to be effective in the cure of skin infections but not of onychomycosis; the latter complaint, however, proved amenable in three out of nine patients to several months' joint therapy with asterol, concentrated lithium bromide, and concentrated glucose solutions.

391. Rothman (S.). **Constitutional anomalies in recalcitrant Trichophyton purpureum infections.**—*J. Mich. med. Soc.*, 51, 7, pp. 849–851, 1952.

This information on *Trichophyton purpureum* [*T. rubrum*] on patients in Chicago clinics has already been noticed from another source [see preceding entry].

392. Bocobo (F. C.) & Gutierrez (P.). **Dermatophytosis among Filipinos: its incidence and flora in the outpatient dermatological clinic of the Philippine General Hospital.**—*Acta med. philipp.*, 8, pp. 131–149, 1952.

Of 91 suspected cases of tinea pedis in the Philippines, 10 were definitely attributable to *Trichophyton mentagrophytes* and one to *T. rubrum*. The former species was isolated from the feet only of three out of 81 patients with lesions on both feet and hands. The species associated with tinea corporis in 19 cultures from 62 patients were *T. rubrum* (13), *T. mentagrophytes* (4), *T. violaceum*, and *Microsporum gypseum* (one each), while the 22 cultures from 56 cases of tinea cruris yielded *T. rubrum* (19), *T. mentagrophytes* (2), and *T. violaceum* (1). There were scarcely any cases of tinea capitis, tinea unguium, and tinea barbae.

393. Cremer (G.). **Een bijzondere form van mycose (granulomen) aan de onderbenen, veroorzaakt door Trichophyton rubrum Castellani.** [A specialized form of mycosis (granulomata) of the tibiae caused by *Trichophyton rubrum* Castellani.]—*Ned. Tijdschr. Geneesk.*, 97, 23, pp. 1463–1468, 1 pl., 1953. [English summary.]

Observations during the last two years at the University Skin Clinic, Amsterdam, showed that *Trichophyton rubrum*, besides causing chronic infection of the feet and hands, was responsible in 15 patients (mostly women) for follicular inflammation of the tibiae, which in severe cases simulated Majocchi's granuloma trichophyticum. Littman's culture medium [1, No. 847] was a valuable adjunct in the isolation and differentiation of the pathogen.

394. Clarke (G. H. V.) & Walker (Jacqueline). **Superficial fungus infections in Nigeria.**—*J. trop. Med.* (*Hyg.*), 56, 5, pp. 117–121, 2 figs., 1 map, 1953.

The specific distribution of dermatophytes at Lagos and elsewhere in Nigeria is not unlike that observed in the Far East. *Trichophyton rubrum* is the most frequent agent of tinea of the glabrous skin. Except in the coastal belt, *T. soudanense* [1, No. 1996], not hitherto reported from Nigeria, is twice as frequent a cause of tinea capitis as *Microsporum audouini*, the local isolates of which appear to be identical with Hare's macroconidial strain [2, No. 373]. Two cultural types of *T. rubrum* were differentiated, corresponding to those described by Vanbreuseghem from the Belgian Congo [1, No. 1996].

395. Catanei (A.). **Sur la valeur de classification des caractères culturaux du champignon du favus.** [On the value of classification of the cultural characters of the favus fungus.]—*Arch. Inst. Pasteur Algér.*, 31, 1, pp. 54–69, 1953.

A detailed account is given of the author's exhaustive studies in Algeria on the cultural characters of *Achorion* [*Trichophyton*] *schoenleini* as a basis for the classification of the organism.

396. Bisgahard-Frantzen (H.). **Om forekomst af ichthyosis vulgaris, onychographosis, Dupuytren-kontrakturer og favus i Grönland.** [On the occurrence of ichthyosis vulgaris, onychographosis, Dupuytren contractures, and favus in Greenland.]—*Ugeskr. Laeg.*, 114, 25, pp. 812–815, 9 figs., 1952.

During a survey of two districts of Greenland in the winter of 1950–1 the writer investigated eight fresh cases of favus [*Trichophyton schoenleini*] and nine of alopecia supposedly due to the same cause.

397. Fischer (E.). **Über die gehäufte Isolierung des Trichophyton faviforme bei Kinderkopftrichophytien.** [On the cumulative isolation of *Trichophyton faviforme* in trichophytosis of the juvenile scalp.]—*Dermatologica*, 105, 6, pp. 327–333, 5 figs., 1952. [English and French summaries.]

At the Dermatological Clinic of the University of Zürich, *Trichophyton faviforme* [*T. verrucosum*: 1, No. 2515], which rarely occurs in Switzerland, was isolated from three out of seven cases of tinea of the face and scalp in girls between the ages of four and ten years. Beerwort agar was the best of several media tested. The cultures were pathogenic to guinea-pigs.

398. Spada (C.). **Considerazioni su tre casi di tigna tricofitica del cuoio capelluto in donne puberi.** [Considerations on three cases of trichophytosis of the scalp in women after puberty.]—*Rass. med. Sarda*, 54, 5–6, pp. 159–167, 1952.

Three cases of scalp infection by *Trichophyton violaceum* in women (one married, aged 26, and two single, 16 and 17) are reported from Cagliari, Sardinia, and discussed in relation to the predisposing factors involved.

399. Pfister (R.). **Gleichzeitiges Vorkommen von Mikrosporon fulvum und Epidermophyton K. W. bei einer Fußmykose. (Beitrag zur Morphologie der Fruktifikationsorgane des Mikrosporon fulvum).** [Simultaneous presence of *Microsporon fulvum* and *Epidermophyton* K. W. in a foot mycosis. A contribution to the morphology of the fructification organs of *Microsporon fulvum*].—*Arch. Derm. Syph., Berl.*, 194, 5, pp. 555–564, 7 figs. (2 col.), 1952.

Of special interest in this case of mixed infection of the right foot in a young female patient at the University Skin Clinic, Freiburg-im-Breisgau, are the combination of *Trichophyton mentagrophytes* (*Epidermophyton* Kaufmann–Wolf) [*T. interdigitale*] and *Microsporum fulvum* [*M. gypseum*] and the occurrence of the latter in Germany, both apparently new records.

400. Gordon (M. A.). **The occurrence of the dermatophyte, Microsporum gypseum, as a saprophyte in soil.**—*J. invest. Derm.*, 20, 3, pp. 201–206, 1953.

At the Communicable Disease Center, Public Health Service, Atlanta, Georgia, macroconidia of *Microsporum gypseum* were demonstrated in a Tennessee soil sample [1, No. 2145], together with tuberculate spores of *Histoplasma capsulatum* [2, Nos. 303, 304], by means of the membrane filter technique. Subsequent streaking of suspensions of the same soil samples on actidione agar resulted in recovery of the organisms in culture. It would thus appear that the soil may be the ultimate source of *M. gypseum* infection in man, with lower animals possibly acting as vectors.

401. Vanbreuseghem (R.) & Van Brussel (M.). **Culture de dermatophytes sur terre et sur milieux à base de terre.** [Culture of dermatophytes on soil and on media with a soil base.]—*C.R. Soc. Biol., Paris*, 146, 9–10, pp. 796–798, 1952.

The aspect of the colonies of *Ctenomyces interdigitalis* [*Trichophyton interdigitale*], *T. rubrum*, *Langeronia soudanensis* [*T. soudanense*], *Epidermophyton floccosum*, and *Sabouraudites* [*Microsporum*] *canis*, grown in pure culture on crude garden soil and the same with the admixture of Sabouraud's agar, conservation agar, and plain agar [2, Nos. 146–148 and next entries], is briefly described. Reproductive organs were formed in profusion on all the substrata, and another feature of the soil cultures was the 'rejuvenation' of the colonies after their culture on the uncongenial Sabouraud's agar.

402. Vanbreuseghem (R.) & Van Brussel (M.). **Culture sur terre et milieux à base de terre, de cheveux, de poils, de squames et d'ongles infectés par des dermatophytes.** [Culture on soil and media with a soil base of human and animal hairs, squamae, and nails infected by dermatophytes.]—*C.R. Soc. Biol., Paris*, 146, 9–10, pp. 798–800, 1952.

Cultures on soil and soil-agar media of dog's and cat's hairs naturally infected by *Sabouraudites* [*Microsporum*] *canis*, those of a guinea-pig inoculated with *Ctenomyces interdigitalis* [*Trichophyton interdigitale*], human nails and squamae infected by *T. rubrum*, and human hairs by *S. rivalieri* and *Langeronia soudanensis* [*T. soudanense*] gave rise to colonies barely distinguishable from those of laboratory material of the foregoing species on the same media [see preceding and next entries]. At the time of plating the dog's and cat's hairs were five and ten days old, respectively, the human hairs six months, and the nails $3\frac{1}{2}$ months.

403. Vanbreuseghem (R.) & Van Brussel (M.). **Emploi et signification des cultures de dermatophytes sur terre et milieux à base de terre.** [Use and significance of cultures of dermatophytes on soil and on media containing soil.]—*Ann. Parasit. hum. comp.*, 27, 5, pp. 541–556, 1952.

When grown on media containing soil, dermatophytes were found to produce reproductive organs in profusion, while the mycelial hyphae became rich in protoplasm [see preceding entries]. Dermatophytes or material infected by them, such as hair, nails, and squamae, can also be grown on sterile soil without added nutrient, and colonies so grown are pathogenic to man and the guinea-pig. Grown on conservation soil pleomorphic strains of *Ctenomyces* [*Trichophyton*] *persicolor* and *Epidermophyton floccosum* were restored to the normal state. A culture of *Langeronia soudanensis* [*T. soudanense*] on Sabouraud-soil medium gave rise to a violet mutant. It was found possible to keep dermatophytes in culture on soil agar for six months without pleomorphic degeneration. From these results it appears that dermatophytes live normally in soil until an opportunity arises for the parasitization of man or animals.

404. Stockdale (Phyllis M.). **Requirements for the growth and sporulation of Trichophyton persicolor.**—*J. gen. Microbiol.*, 8, 3, pp. 434–441, 3 graphs, 1953.

Studies in the Department of Botany, University College of the South West of England, Exeter, demonstrated that the optimum temperature for the growth and sporulation of *Trichophyton persicolor* [1, No. 2310] is 25° to 30° and the optimum pH slightly below 7. Macroconidia were produced most abundantly at pH 8; percentage germination and germ-tube length reached a maximum at 100 per cent. humidity. The carbon compounds supporting the best growth were mannose, glucose, mannitol, and maltose; the amino acids leucine, glycine, histidine, and cysteine were utilized. The fungus was autotrophic for vitamins. Zinc, iron, copper, and manganese sulphates stimulated growth and sporulation in a medium treated for the removal of trace elements.

405. Costello (M. J.). **Vesicular Trichophyton rubrum (purpureum) infection simulating dermatitis herpetiformis.**—*Arch. Derm. Syph., Chicago*, 66, 5, pp. 653–654, 1952.

A case of generalized vesicular-bulbous infection of 15 years' standing by *Trichophyton rubrum* is presented from New York. An initial diagnosis of dermatitis herpetiformis was shown to be wrong when cultures of the fungus were obtained from the vesicular fluid. The nails were not involved.

406. Spada (C.) & Zonchello (S. A.). **Studio delle variazioni determinatesi nella flora dermatomicetica di Cagliari nell' ultimo quinquennio.** [A study of the variations identified in the dermatomycetic flora of Cagliari during the last five years.]—*Rass. med. Sarda*, N.S., 3, 5–6, pp. 149–155, 1952.

Trichophyton spp., principally *T. violaceum*, constituted 94·6 per cent. of the 165 strains of dermatophytes isolated from a total of 1,325 cases of cutaneous complaints at Cagliari, Sardinia, during the period from 1947 to 1951, inclusive. Next in frequency were *T. crateriforme* [*T. tonsurans*], *T. fumatum*, and *T. rosaceum* [*T. roseum*]. *T. fumatum*, *T. gypseum lacticolor* [*T. lacticolor*], and *T. g. persicolor* [*T. persicolor*] were identified in the local dermatomycetic flora for the first time. *Achorion* [*T.*] *schoenleini* and microsporoses (*Microsporum audouini* and *M. felineum* [*M. canis*]) represented, respectively, only 4·2 and 1·2 per cent. of the total number of isolates.

407. Ortenzio (L. F.). **Report of fungicide and subculture media for disinfectant testing.**—*J. Ass. off. agric. Chem. Wash.*, 36, 2, pp. 363–364, 1953.

The official spot-plate method for the propagation of test cultures of *T*[*richophyton*] *interdigitale* was compared with the four-plate procedure for efficiency in the production of spores of uniform resistance. In the spot-plate technique the total spore count in the filtered physiological saline solution prepared in harvesting the spore crops for subsequent dilution ranged from 66,000,000 to 125,000,000 per ml. Resistance to phenol dilutions in the standardized spore suspensions varied between 1 in 60 and 1 in 70. In the four-plate method the neopeptone agar was seeded with aliquots ranging in volume from 0·05 to 0·5 ml. of the standard spore suspension of 5,000,000 spores per ml. The number of spores increased as the size of the inoculum decreased, a uniformly large crop with an average count of 95,000,000 per ml. resulting from the lowest aliquot of 0·05 ml. Resistance to phenol was mostly at a dilution of 1 in 60, but the fungus occasionally succumbed to one of 1 in 65. Further studies on the four-plate method of test culture propagation are recommended, using smaller numbers of spores as inoculum.

Only one commercial preparation of Congo red (Merck's reagent grade) gave

satisfactory results in collaborative studies on the efficiency of this dye as a neutralizer for use in subculture media in tests of quarternary ammonium germicides.

408. McRae (M. E.). **Some considerations in the treatment of common fungus infections of the skin.**—*J. sth. Med. Surg.*, 114, 5, pp. 111–113, 1952.

Some general observations on dermatomycoses and the factors predisposing to infection are followed by recommendations for their control by the topical application of standard fungicidal remedies.

409. Georg (Lucille K.). **Use of a cycloheximide medium for isolation of dermatophytes from clinical materials.**—*Arch. Derm. Syph., Chicago*, 67, 4, pp. 355–361, 2 figs., 1953.

At the Communicable Disease Center, United States Public Health Service, Atlanta, Georgia, Sabouraud's dextrose agar supplemented by penicillin, streptomycin, and actidione proved to be of great value for the isolation of dermatophytes from clinical material, especially in the presence of gross contamination by bacteria and moulds. Thus, in a series of cultures from 30 persons with suspected onychomycosis, three times as many isolates of *Trichophyton mentagrophytes*, *T. rubrum*, and *Epidermophyton floccosum* (about half in pure culture) were obtained on an actidione medium as on a similar one without the antibiotic. Clippings from the toe-nails of one patient yielded *T. mentagrophytes*, *T. rubrum*, and *T. tonsurans*.

Likewise, *T. verrucosum* (the name substituted by Ainsworth and the author, to be published in *Mycologia*, for *T. faviforme*, *T. album*, *T. discoides*, and *T. ochraceum*) was isolated three times as often from nine cases of suspected tinea in cattle [1, No. 1270] on the actidione as on the unfortified medium.

410. Fahlberg (W. J.). **In vitro studies on the fungistatic effect of antihistaminic drugs.**—*J. invest. Derm.*, 20, 3, pp. 171–176, 1953.

At the Baylor University College of Medicine, Houston, Texas, the descending order of efficacy of the antihistamines as fungistatic agents [2, Nos. 8, 153] in tests on a number of dermatophytes and fungi causing systemic infection was as follows: diparalene [2, No. 8], diatrine, thephorin [1, Nos. 2003, 2322], benadryl [1, Nos. 1529, 2175, 2222], pyribenzamine, thenylene, theophylline, and neo-antergan. Diparalene inhibited the growth of all the fungi tested in concentrations of 0·5 to 0·75 mg. per ml., except *Cryptococcus neoformans*, for which a dosage of 2 mg. was required. The fungistatic activity of the drugs was enhanced in most cases by the presence of 10 per cent. horse serum in the medium. No definite evidence of fungicidal activity could be demonstrated for even the three most potent fungistatic antihistamines.

411. Peck (S. M.), Traub (E. F.), & Spoor (H. J.). **Aqueous solutions of sodium propionate with chlorophyll as a therapeutic agent.**—*Arch. Derm. Syph., Chicago*, 67, 3, pp. 263–277, 6 figs., 1953.

Experimental and clinical studies of sodium propionate with chlorophyllin in the treatment of various skin complaints are reported from the New York Medical College. Encouraging results were obtained, for instance, in the therapy of tinea pedis in 15 patients, using the powder as a foot bath twice daily at a dosage of 1·3 gm. or upwards in a pint of water. In *in vitro* tests sodium propionate alone was fungistatic to *Microsporum gypseum*, *Trichophyton violaceum*, and *Candida albicans*, and in combination with chlorophyllin to *M. audouini* also.

412. Hopkins (J. G.), Lingamfelter (C. S.), Kiesselbach (M. R.), & Hamilton (O. A.). **Treatment of tinea capitis with salicylanilide preparations.**—*Arch. Derm. Syph., Chicago*, 67, 5, pp. 479–483, 1953.

Of 326 cases of tinea capitis seen at the Vanderbilt Clinic, New York, between 1946 and 1949, 263 were attributable to *Microsporum audouini* and 56 to *M. canis*. Of those with *M. audouini* infections 80 were treated with two different salicylanilide prescriptions, combined with shaving of the head, and cures of 34 and 63 per cent. were recorded during the third month of treatment. These results confirm the opinion of other workers that *M. audouini* infections are largely curable without resorting to roentgen epilation [2, No. 374], which should be reserved for recalcitrant cases. Where kerion is present local therapy is always sufficient.

413. **Welches sind heute die zweckmäßigsten Behandlungsverfahren für Pilzerkrankungen?** [What are the most efficient therapeutic methods in fungal diseases today?]—*Derm. Wschr.*, 126, 46, pp. 1092–1105, 1952.

This is a symposium on up-to-date methods of therapy for various forms of dermatomycoses, to which the contributors were H. Götz, K. W. Kalkoff, J. Kimmig, A. M. Memmesheimer, R. Richter, H. T. Schreus (all in Germany), and R. Schuppli (Switzerland).

414. Pec (J.). **Zur Therapie der Epidermophytien.** [On the therapy of epidermophytosis.]—*Wien. med. Wschr.*, 102, 45, pp. 912–913, 1952.

Attention is drawn to the increasing prevalence of dermatomycoses in Austria, their clinical manifestations are described, and the problem of therapy is discussed. Great importance is attached to the maintenance or restoration of the protective acid mantle of the skin, for which undecylenic acid is very efficacious. In this connexion ten cases of epidermophytosis are briefly described which responded favourably to treatment with mykozem, an ointment with a pH of 5 containing 5 per cent. undecylenic acid as well as urea, supplied by Chemosan-Union AG, Vienna.

415. Götz (H.). **Zur Behandlung der Epidermophytie.** [On the therapy of epidermophytosis.]—*Münch. med. Wschr.*, 94, 30, pp. 1523–1527, 1952.

In contrast to the period following the first world war, trichophytoses [*Trichophyton* spp.] are stated to be of secondary importance at present in Germany compared with epidermophytoses [*Epidermophyton* sp.], mostly involving the feet, which constitute two-thirds of the cases examined at the Dermatological Clinic of Munich University. The epidemiology of the complaint is discussed and a practical scheme outlined for its control [cf. next entries].

416. Wallner (E.). **Über Fußmykosen und ihre Behandlung mit Vioform-Crème.** [On mycoses of the feet and their therapy with vioform cream.]—*Münch. med. Wschr.*, 94, 30, pp. 1527–1529, 1952.

At a Viennese hydropathic institution the writer treated 105 patients suffering from mycoses of the feet (*Epidermophyton* [*Trichophyton*] *interdigitale* and *E.* [*T.*] *rubrum*) [see preceding entry] with 3 per cent. vioform cream (Ciba, Basle), containing as its active principle iodine-chlorine-oxyquinoline. Cures without relapse were secured in 67 cases (63·8 per cent.) and after one to three relapses in 30 (28·5), while eight (7·6) were improved.

417. Zimmermann (O.). **Erfahrungen über Behandlung der Epidermophytien mit Mycoderm.** [Experiences in the treatment of epidermophytoses with mycoderm.]—*Dtsch. med. J.*, 3, 9–10, p. 218, 1952.

Encouraging results are reported from Cologne-Sülz, Germany, in the

therapy of epidermophytia plantaris et palmaris (*Epidermophyton* sp.) by topical applications of mycoderm ointment (Desitin-Werk Carl Klinke G. m. b. H., Hamburg), which contains alkylated resorcin, a high molecular amino ether, and salicylic acid. Only two of the 100 patients suffered relapses, from which they recovered after further treatment.

418. Lang (J.). **Zur Therapie der Hautkrankheiten mit Hyphocid.** [On the therapy of skin diseases with hyphocid.]—*Med. Klin.*, 47, 30, pp. 1000–1001, 1952.

Over a period of 10 months in his private practice in Vienna the author treated 70 cases of dermatomycosis with hyphocid (an alcoholic solution of ferrithioformic acid nitril with the admixture of p-oxybenzoic acid and ammonium sulphate, supplied by Dr. L. Holzinger, Vienna, XIV). Very promising results were secured, especially in the relief of tinea pedis (Kaufmann–Wolf) [*Trichophyton interdigitale*], by three to four applications weekly of hyphocid in combination with 2 to 5 per cent. of a salicyl ointment.

419. Wilson (J. W.), Levitt (H.), Harris (T. L.), & Heiligman (E. M.). **Toxic encephalopathy occurring during topical therapy with asterol; report of two cases.**—*J. Amer. med. Ass.*, 150, 10, pp. 1002–1004, 3 graphs, 1952.

Clinical details are reported from Los Angeles, California, of two cases of toxic encephalopathy occurring in the course of topical therapy with asterol dihydrochloride [2, No. 162 and next entries]. One patient was a four-year-old boy and the other a female infant, and the fungi concerned were *Trichophyton tonsurans* and *Candida albicans*, respectively.

420. Hitch (J. M.). **Neurotoxic symptoms following use of asterol dihydrochloride. Report of three cases.**—*J. Amer. med. Ass.*, 150, 10, pp. 1004–1005, 1952.

Three cases of neurotoxicity following topical applications of asterol dihydrochloride [see preceding and next entries] are reported, two from Jamaica, New York, and one from North Carolina. All the patients were boys, $2\frac{1}{2}$, $4\frac{1}{2}$, and three years old, and the dermatophytes involved were *Microsporum audouini* in two and *M. lanosum* [*M. canis*] in one.

421. Featherston (W. M.). **Convulsions following use of asterol dihydrochloride. Report of a case.**—*J. Amer. med. Ass.*, 150, 10, p. 1006, 1952.

A case of convulsions in a four-month-old male infant, occurring during treatment with asterol dihydrochloride for the relief of [unspecified] ringworm [the lesions fluorescing under Wood's light], is reported from Elk City, Oklahoma [see preceding entries].

422. Franks (A. G.). **Tinea capitis treated with thiolutin.**—*J. invest. Derm.*, 19, 4, pp. 269–270, 1952.

Thiolutin, an antibiotic isolated from a group of actinomycetes classified as *Streptomyces albus*, gave apparent cures in 10 out of 12 cases of tinea capitis caused by *Microsporum audouini*, *M. lanosum* [*M. canis*], or *Trichophyton sulphureum*, in experiments at New York University Medical School.

423. Bayo Bayo (J. M.) & Pereiro Miguens (M.). **Fungistatic and fungicidal action of bromoacetic acid esters and of dimethylhexadecylbenzylammonium chloride.**—*Arch. Inst. Farmacol. exptl*, 4, pp. 193–226, 1952. [Spanish. Abs. in *Chem. Abstr.*, 47, 13, p. 6591, 1953.]

At the Institute of Experimental Pharmacology, Santiago de Compostela, Spain, the ethyl and ethylene esters of bromoacetic acid and the detergent dimethylbenzylhexadecylamine hydrochloride exerted a powerful fungistatic and fungicidal action on *Trichophyton tonsurans*, *T. mentagrophytes*, *T.*

schoenleini, *Epidermophyton floccosum*, and *Microsporum canis* in dilutions as high as 10^{-4}. Moreover, the bromoacetic acid esters and the detergent are synergistic, so that growth is inhibited even at dilutions up to 10^{-7}.

424. Brabetz (V.). **Mykose-Therapie. Auswertung von über 1000 Berichten aus Klinik und Praxis.** [Therapy of mycoses. Evaluation of over 1,000 reports from clinic and practice.]—*Ther. d. Gegenw.*, 91, 5, pp. 184–186, 1952.

From Büdingen, Germany, the writer reports highly encouraging results in the treatment of over 1,000 cases of various dermatomycoses with phebrocon [2, No. 123] applied in the form of serol (a hydrophilic colloid base), lotion, or powder.

425. De Bonis (U.) & Gaballo (S.). **Sul trattamento locale della pityriasis versicolor con penicillina.** [Local treatment of pityriasis versicolor with penicillin.] —*Minerva med.*, 43, 39, pp. 1013–1014, 1952.

Encouraging results in the topical treatment of pityriasis versicolor (*Microsporum* [*Malassezia*] *furfur*) with an ointment containing 100,000 units penicillin F.G.X. as the effective agent are reported from the 'Principe di Piemonte' Institute, Naples. The other ingredients were sulphonamides, sterile antipyogenic filtrates, and an excipient.

426. Pignot (M.). **Traitement des pityriasis du cuir chevulu. II. Pityriasis stéatoide (pellicules grasses).** [Treatment of the pityriases of the scalp. II. Steatoid pityriasis (greasy scurf).]—*Pr. méd.*, 60, 18, p. 378, 1952.

Prescriptions are given for some conventional remedies against steatoid pityriasis of the scalp, associated with the 'spore of Malassez' [*Pityrosporum ovale*] and a grey coccus, which may also extend to the eyebrows, nasal fossa, moustache, beard, and chest.

427. Gordon (M. A.). **Lipophilic yeastlike organisms associated with tinea versicolor.**—*J. invest. Derm.*, 17, 5, pp. 267–272, 2 figs., 1951.

At the Communicable Disease Center, Public Health Service, Federal Security Agency, Atlanta, Georgia, attempts to culture *Malassezia furfur* by the use of agar media overlaid with oils resulted in the isolation of a series of lipophilic yeast-like organisms from lesions of tinea versicolor. No fungi developed in several trials with Moore's peptone-dextrose medium. In 13 out of 18 cases the causal organism was an apparently new species of *Pityrosporum*, to which the name *P. orbiculare* has been given [1, No. 2366]. It is exacting in its nutritive requirements, growing best on Sabouraud's dextrose agar (either at 30° or 37° C.) with added penicillin and streptomycin plus oil. Two out of eight ostensibly normal skins also yielded *P. orbiculare*.

428. Aguilera Maruri (C.) & Brena Zorrilla (M.). **Pityriasis versicolor de localisation faciale exclusive.** [Pityriasis versicolor with an exclusively facial location.]—*Ann. Derm., Paris*, Sér. 8, 10, 4, pp. 408–409, 1 fig., 1950.

A case of pityriasis versicolor (*Microsporum* [*Malassezia*] *furfur*) in a nine-year-old girl at Santander, Spain, is of interest for two reasons, the rarity of the complaint in children and the unusual site on the chin.

429. Rocha (G. L.), Silva (C.), Lima (A. O.), & Goto (M.). **Experimental studies on Pityrosporum ovale ; its pathogenicity and antigenic capacity.**—*J. invest. Derm.*, 19, 4, pp. 289–292, 1952.

In an experiment carried out in Rio de Janeiro, Brazil, no pathogenic properties of *Pityrosporum ovale* could be demonstrated in any of 50 adults

whose skin was inoculated with the organism. Only six persons out of 200 showed a reaction to 'pityrosporin'. These results are considered to support the contention of many dermatologists that *P. ovale* is not pathogenic to humans and has, itself, no antigenic capacity.

430. Silva (G.) [? C.], Rocha (G. L.), Lima (A. O.), & Goto (M.). **Estudos sôbre o Pityrosporum ovale. I. Acção patogénica.** [Studies on *Pityrosporum ovale*. I. Pathogenic action].—*Hospital, Rio de J.*, 42, 1, pp. 11–14, 1952.

This is a Portuguese version of the studies on *Pityrosporum ovale*, carried out at the Dermatological Clinic of the National Faculty of Medicine, Rio de Janeiro, Brazil, reported in the preceding entry.

431. Janke (D.) & Rohrschneider (W.). **Beitrag zu den seltenen Mykosen : über eine Pilzerkrankung der Tränenröhren und der Oberhaut und Befund eines bisher unbekannten Cephalosporiums.** [Contribution to the rare mycoses: on a mycotic disease of the tear ducts and epidermis with the finding of a hitherto unknown *Cephalosporium*.]—*Derm. Wschr.*, 123, 3, pp. 49–61, 13 figs., 1951.

A chronic case of a keratotic eruption of the palms (19 years' duration) and of an infection of eyelids and tear ducts of 12 years' standing in a 47-year-old attorney is reported from the Skin and Eye Clinics of Munster University, Westphalia. A superficial injury to the inner left ankle, contracted nine years before the onset of the extension to the hands, is believed to have been the origin of the trouble. The hitherto undescribed *Cephalosporium* [cf. 1, No. 1550] isolated from the affected sites is characterized in peptone-malt agar cultures by a mycelium 1 to 1·5 μ in width, conidiophores 1 to 18 by 1 to 15 μ, and conidia 3 by 0·6 to 0·8 μ, grouped in 'heads' averaging 4 μ in diameter. Animal experiments were performed with positive results.

432. Da Silva (N. N.). **Estudos com a 'fase bacilar' do 'Sporotrichum schencki'.** [Studies on the bacillary phase of *Sporotrichum schencki*.]—*An. brasil. Derm. Sif.*, 25, 3, pp. 131–144, 3 figs., 1950. [Portuguese, with English summary.]

Sporotrichum schencki grown on Francis's medium (heart-cystine-blood agar) forms long, bacillary, Gram-positive cells as demonstrated by Campbell. These were used in a fairly homogeneous suspension as agglutinogen and opsono-cytophagic antigen. In the very rapid and specific slide agglutination test a 1 : 2 titre was considered positive for sporotrichosis. The tube agglutination test with the same antigen also provided a sensitive and specific method for antibody detection. Sera giving titres of 1 : 16 or more were recovered from cases diagnosed as sporotrichosis on the basis of other laboratory procedures. The opsono-cytophagic test is another valuable method of diagnosis which opens a new approach to immunological research on this disease. Cross-immunity reaction studies disclosed a consistent similarity between samples of *S. schencki*, indicating serological unity.

433. Soares (J. A.), Ribeiro (D. De O.), & Lacaz (C. Da S.). **Esporotricose familiar.** [Family sporotrichosis].—*An. brasil. Derm. Sif.*, 27, 1, pp. 5–11, 2 figs., 1952. [Portuguese, with French summary.]

Three cases of sporotrichosis (*Sporotrichum beurmanni* [*S. schencki*]) in females aged 5, 6, and 46 were observed in the same Brazilian family, contagion probably having occurred through dirty finger-nails in conjunction with malnutrition and lack of hygiene. This record is particularly interesting owing to the rarity of such cases.